6805 7310

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V.2

SHOUT
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IT

HORIZONTAL PERMEABILITY CALCULATIONS

SG-20

C-b Lease, Rio Blanco County, Colorado

DST No.	Interval feet	Permeability md.	Remarks
1	848-894		Injected at unknown rate.
2	945-986		Insufficient decline data

SG-21

C-b Lease, Rio Blanco County, Colorado

DST No.	Interval feet	Permeability md.	Remarks
2	950-1000		No injection information
1	1000-1036	20.	

HORIZONTAL PERMEABILITY CALCULATIONS
Core Hole SG-17
C-b Lease, Rio Blanco County, Colorado

Multi-Packer Tests

MPT No.	Series	Interval feet	Permeability md.	Remarks
1	11210-LL	1089-1114	75	
2	11210-LL	1123-1148		Packer apparently leaked, or bad gauge
3	11210-LL	1147-1172	92.	
4	11210-LL	1184-1209		Middle packer apparently leaked
5	11210-LL	1338-1363		" "
6	11210-LL	1422-1447		" "

HORIZONTAL PERMEABILITY CALCULATIONS
SG-17 Drill Stem Tests

C-b Lease, Rio Blanco County, Colorado

DST No.	Interval feet	Permeability md.	Remarks
31	1918-1970	4.0	
32	1966-2020	169.	
33	2018-2070		No injection
34	2120-2170	30.	
35	2220-2270		No injection
36A	2320-2370		No injection
36B	2315-2370		No injection
37	2395-2460	35.	

J = Jetting Test

HORIZONTAL PERMEABILITY CALCULATIONS
SG-17 Drill Stem Tests

C-b Lease, Rio Blanco County, Colorado

DST No.	Interval feet	Permeability md.	Remarks
1	386-436		Did not analyze
2	788-808		Did not analyze
3	822-869	11.0	
4	866-919	12.7	
5	919-970	34.0	
6	967-1017	10.7	
7	1017-1067	19.9	
8	1066-1116	20.0	
9	1116-1166	8.0	
10	1164-1212	185.0	
11	1200-1224	21.2	
12	1215-1224	20.8	
13	1224-1251	300.	
14	1251-1271	8.0	
15	1280-1309	13.0	
16	1309-1336		Data scattered
17	1327-1373	52.	
18	1373-1419	15.	
19	1423-1470		Test failed
20	1423-1470	23.9	
21	1473-1522	3.0	
22	1428-1522	4.7	
23	1512-1572	4.0	
24	1561-1572	23.0	
24 (J)	1561-1622		No pressure data. Equipment problem.
25	1618-1640	4.0	
25 (J)	1618-1670	1.6	
26	1668-1679	30.0	
26 (J)	1668-1720	7.3	
27	1711-1770	6.0	
28	1768-1779	42.0	
28 (J)	1768-1820	9.8	
29	1818-1870	2.0	
30	1869-1880	275.	
30 (J)	1869-1920	30.	

J = Jetting Test

Date: March 4, 1975

To: John Matis - PCB-555, Denver

From: Charles Martin - R138 Plano

Subject: Horizontal Permeability Data for Federal SG Wells Nos. 17, 20 and 21

Attached are horizontal permeability data for Federal SG Wells Nos. 17, 20, and 21. These values were calculated from drill stem tests conducted by Sperry Sun and Johnston. The method of calculation is described in "Pressure Buildup and Flow Tests in Wells" by C. S. Mathews and D. E. Russell, on pages 12-17 and 72-83. This book is published by the Society of Petroleum Engineers. An example calculation is found in Appendix F.

Charles Martin

Charles Martin

CM:dm

cc: A. L. Barnes

Attachments

characterized as being of good quality. However, below 1800 feet, the character of the water changed and small isolated intervals of saline water were encountered. This leads to the inference that the saline water at depth, beneath the Mahogany zone under Tract C-b, is confined and is not able to migrate upward. Preliminary data from the lower zone phase of the pumping test at AT-1 tend to corroborate this inference.

(Jetting tests provide only a composite picture of the entire open hole, at any particular time during drilling.) Therefore, routine jetting tests were abandoned in favor of the more useful drill stem tests during the drilling of SG-17.

In addition to the standard, single packer drill stem tests, it was decided that more sophisticated multi-packer tests should also be included in the SG-17 drilling package. A three-packer tool was assembled in which water could be selectively withdrawn or injected into very small packed-off intervals. Attached to the bottom of the tool was a special device used to set the string of packers in the open hole. This special device and packers, in total, was called a "hook wall multi-packer assembly." Pressure sensing bombs were located above and below all of the packers, to detect changes in fluid pressures and to determine packer failure. The tool could be rotated at the surface, and the hook "set" into the rock of the well bore. The packers were then expanded and the test conducted.

The major aspect of all three multi-packer test series (conducted on December 8, 1974, January 13, 1975; and January 14 to 15, 1975) was to inject water at rates of 5, 10, 20, and 20+ gallons per minute, into the primary packed off interval. The change in pressures in the various zones caused by this injection of water was recorded by the pressure bombs. After completing the injections the tool was loosened, raised to a higher interval, and another test run. Details on procedures and schematics of the tool may be found in the data section, on the Sperry Sun data sheets, and on the Golder Associates computer plots.

Horizontal permeabilities can be calculated from both drill stem test results and multi-packer test results, but the primary objective of the multi-packer testing was to determine vertical permeability. The configuration of the tool and packer assembly permits the collection of pressure data which theoretically can be reduced to yield vertical permeability values. It is of great importance to be able to establish the probable rate of water inflow from the roof of the C-b underground mine, and this involves both horizontal and vertical permeabilities. The calculated horizontal permeabilities from SG-17 drill stem tests and multi-packer tests are presented in the tables on pages II B-255 through II B-257. (The table on Page II B-258 similarly presents the same information for the drill stem tests in core holes SG-20 and SG-21.) The test results indicated that vertical permeability is some fraction less than the horizontal permeability, although it could not be positively quantified. Data from many of the multi-packer tests also showed evidence of packer failure and therefore could not be quantitatively analyzed for vertical permeability. This led to the conclusion that multi-packer testing probably cannot give absolute values for vertical permeability on Tract C-b.

With regard to the water quality data collected during the drilling of SG-17, it can be concluded that the water beneath the SG-17 location is stratified into a series of small aquifers separated by unfractured rich oil shale zones. The water in the upper strata can generally be

II B-8 AQUIFER DATA
DRILL STEM TESTS AND MULTI-PACKER DATA

General Comments

Included in this segment of the Quarterly Report are three primary data items:

1) A summary table of the intervals tested and the calculated permeability values (provided by ARCo's Reservoir Simulation Group at Plano, Texas)

2) Plots of the data from each drill stem test (made by Golder Associates). The plots have been inserted for clarity, although no attempt has been made to discuss the "pressure falloff" analytical methods used. The reader is referred to a book entitled "Pressure Buildup and Flow Tests in Wells," by C. S. Mathews and D. E. Russell. The book is published by the Society or Petroleum Engineers

3) Data sheets from Sperry Sun and Johnston pressure bombs used during the drill stem tests and multi-packer tests

Details of Testing

Prior to the commencement of drilling of SG-17, it was determined that a detailed horizontal permeability and water quality profile of Tract C-b sub-surface conditions would be useful for many purposes. Mining engineers in particular, were concerned with these two important mine design factors. Therefore, it was decided to conduct drill stem tests at regular intervals as an integral part of the core hole drilling of SG-17.

To conduct these drill stem tests, at any given depth, a packer is lowered on drill pipe. The packer is set at some interval above the bottom of the hole and then water is jetted out of the drill pipe for some prearranged interval of time. After the jetting is terminated, the rise or recovery in water level in the packed-off zone is recorded. The horizontal permeability of that zone can then be calculated from the recovery data. The computation methods are similar to those used for standard jetting tests described in Quarterly Report #1.

Although substantially more expensive, the drill stem test has several important advantages over routine jetting tests:

1) It allows a direct calculation of horizontal permeability for a particular small interval in the hole.

2) It allows the collection of a water quality sample from a small discrete sub-surface interval.

3) It can be used to provide a permeability and water quality profile, or picture of how conditions change with depth.

Drill Stem Tests - SG-17

GOLDER ASSOCIATES

P R O G R A M - C B A P

BORE SG 17 DST 01 DATE 07NOV74 CARDDECK 1 JOHNSTON STEM

02/17/75-22:08:50

/COMMENT INTERVAL TESTED 386-436 FT. EVACUATION CREEK FORMATION

WELL DIAMETER (INCHES) = 6.75

GROUND ELEVATION (FEET) = 7836.80

BOMB NO. = J-024

BOMB RANGE (PSI) = 2000

POSITION OF BOMB (FEET) = 365.00

LOCATION OF BOMB = STEM

BOTTOM OF PACKERS UPPER = 386.00

(FEET) MIDDLE = 386.00

LOWER = .00

LENGTH OF PACKERS (FEET) = 2.04

BOREHOLE DEPTH (FEET) = 436.00

THIS RECORD CONTAINS 18 CARDS

NOTES:

1. Test carried out above the air/water interface.

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 1

Date: Nov. 7, 1974 Interval tested: 386-436 ft.

Pressure gauge: Johnston (Upper)

Formation tested: Evacuation Creek

GOLDER ASSOCIATES

PROGRAM - CBRAP

BORE SG 17 DST 01 DATE 07NOV74 CARDDECK 1 JOHNSTON STEM

02/17/75-22149127

/COMMENT INTERVAL TESTED 386-436 FT, EVACUATION CREEK FORMATION

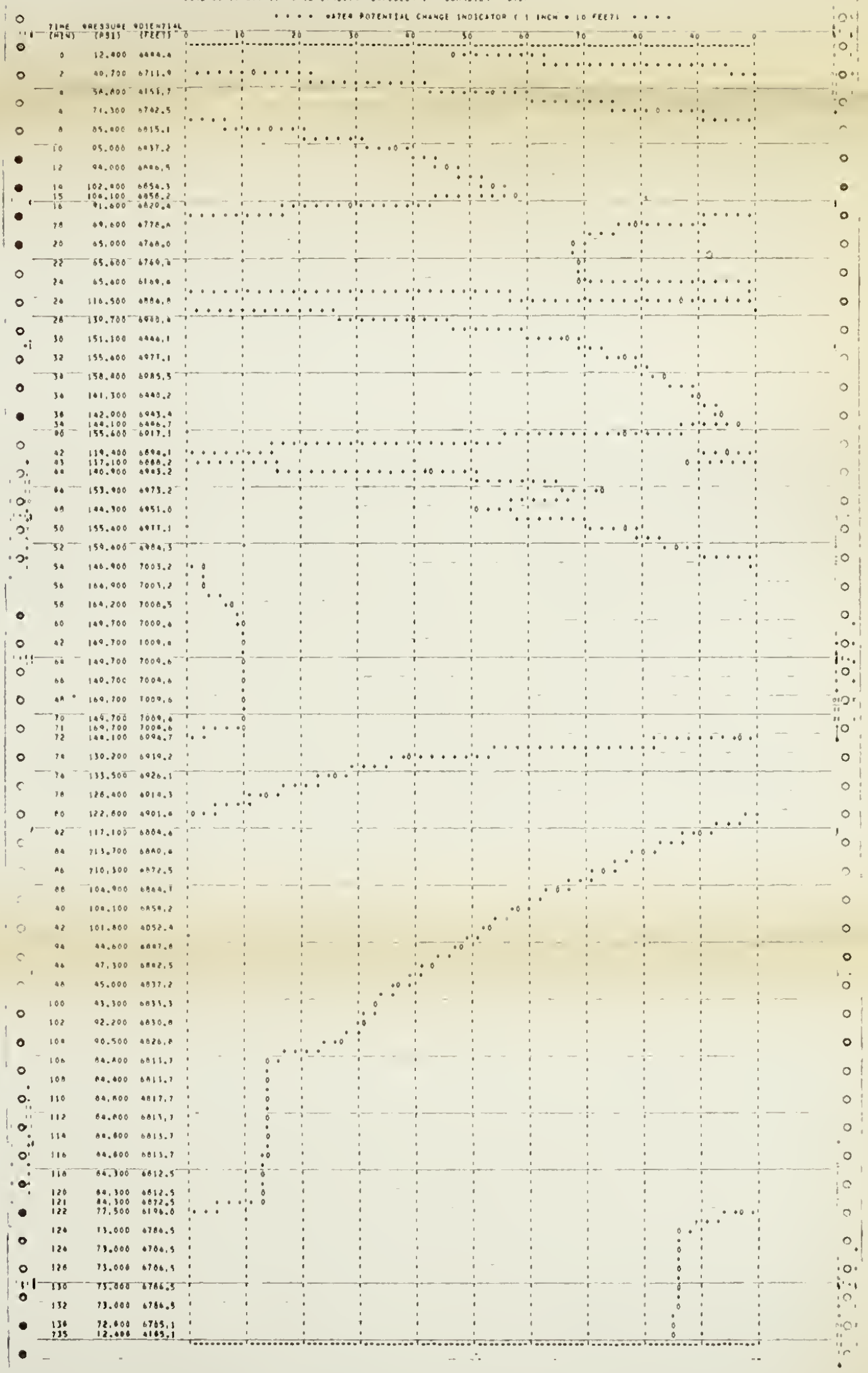
WELL DIAMETER (INCHES)	=	4.75
GROUND ELEVATION (FEET)	=	7034.00
BOMB NO.	=	J-409
BOMB RANGE (PSI)	=	2800
POSITION OF BOMB (FEET)	=	418.00
LOCATION OF BOMB	=	STEM
BOTTOM OF PACKERS UPPER	=	300.00
(FEET) MIDDLE	=	386.00
LOWER	=	.00
LENGTH OF PACKERS (FEET)	=	2.00
BOREHOLE DEPTH (FEET)	=	434.00

THIS RECORD CONTAINS 18 CARDS

BORE SG 17 DST 01 DATE 07NOV74 CARDDECK 1 JOHNSTON STEM

* * * * WATER POTENTIAL CHANGE INDICATOR (1 INCH = 10 FEET) * * * *

TIME (MIN)	PRESSURE (PSI)	POTENTIAL (FEET)
0	12.400	6884.6
2	40.700	6711.9
4	58.800	6151.7
6	71.300	6702.5
8	85.400	6815.1
10	95.000	6837.2
12	94.000	6886.5
14	102.400	6854.3
15	104.100	6858.2
16	91.600	6820.4
18	69.600	6778.8
20	65.000	6768.0
22	65.600	6769.8
24	65.400	6769.6
26	116.500	6886.8
28	139.700	6940.8
30	151.100	6966.1
32	155.600	6977.1
38	158.800	6985.3
36	161.300	6990.2
38	142.000	6943.4
34	148.100	6966.7
40	155.600	6017.1
42	119.400	6898.1
43	117.100	6888.2
44	140.900	6943.2
46	153.900	6973.2
48	144.300	6951.0
50	155.400	6977.1
52	159.600	6984.3
54	146.900	7003.2
56	164.900	7003.2
58	164.200	7008.5
60	149.700	7009.6
62	149.700	7009.6
64	149.700	7009.6
66	149.700	7009.6
68	169.700	7009.6
70	149.700	7009.6
71	169.700	7009.6
72	149.100	6994.7
74	130.200	6919.2
76	133.500	6926.1
78	126.400	6910.3
80	122.600	6901.6
82	117.100	6884.6
84	113.700	6880.6
86	110.300	6872.5
88	104.900	6864.7
90	104.100	6858.2
92	101.800	6852.4
94	44.600	6887.8
96	47.300	6882.5
98	45.000	6837.2
100	43.300	6831.3
102	92.200	6830.8
104	90.500	6826.8
106	84.800	6811.7
108	84.400	6811.7
110	84.600	6817.7
112	84.800	6813.7
114	84.800	6813.7
116	84.800	6813.7
118	84.300	6812.5
120	84.300	6812.5
121	84.300	6872.5
122	77.500	6196.0
124	73.000	6786.5
126	73.000	6786.5
128	73.000	6786.5
130	73.000	6786.5
132	73.000	6786.5
134	72.600	6785.1
135	72.600	6785.1



NOTES:

1. Test carried out above the air/water interface.

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 1

Date: Nov 7, 1974 Interval tested: 386-436 ft.

Pressure gauge: Johnston (Lower)

Formation tested: Evacuation Creek

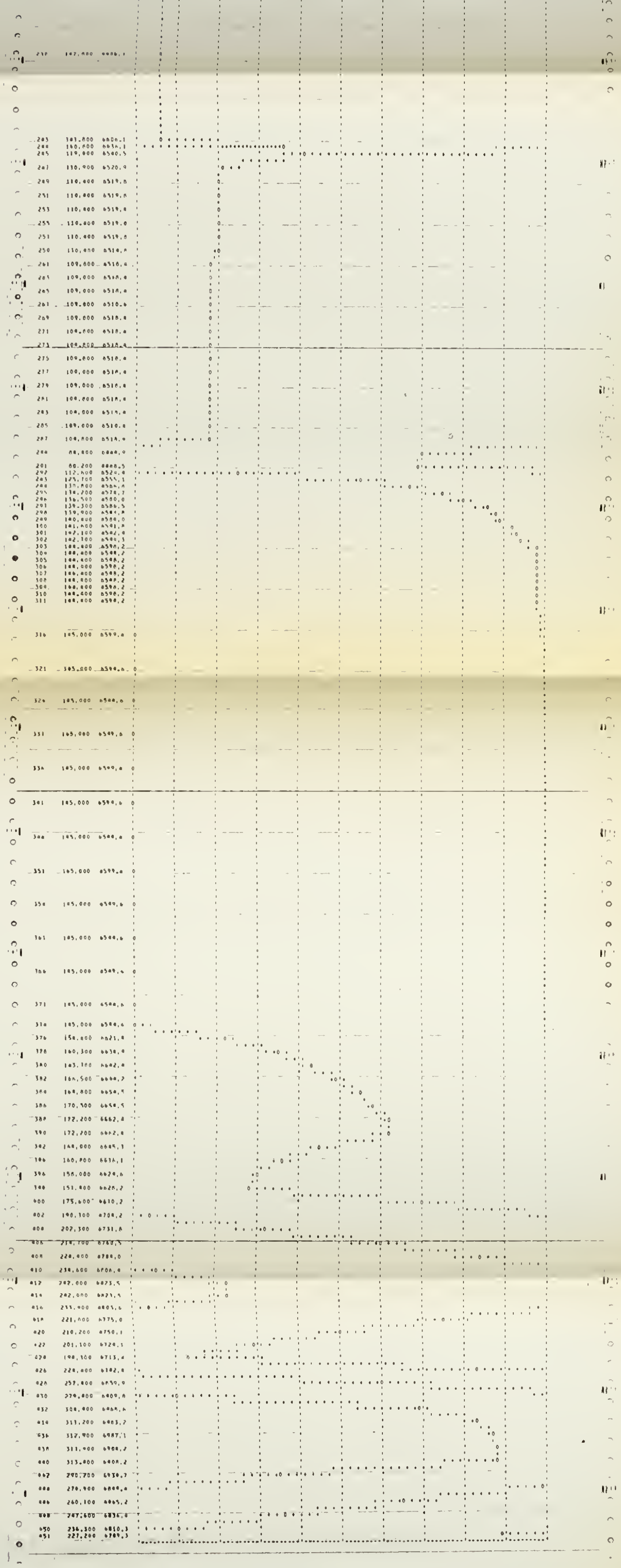
Golder Associates

SG-17 DST-1

BORE SG II 031 02 DATE 09NOV74 CARDDECK 2 JOHNSION SIEM

WATER POTENTIAL CHANGE INDICATOR 1 1 INCH = 10 FEET

TIME (MIN)	PRESSURE (PSI)	POTENTIAL (FEET)
0	10,500	6248,5
5	145,000	6584,6
10	145,500	6600,8
15	146,100	6607,2
20	146,700	6603,5
25	174,200	6661,0
30	187,200	6608,7
35	187,200	6608,7
40	187,200	6608,7
45	187,200	6608,7
0	31,000	6338,5
1	48,000	6375,8
2	65,600	6416,8
3	83,100	6450,2
4	88,000	6493,5
5	108,700	6515,0
6	118,000	6532,7
7	122,800	6548,8
8	127,800	6560,2
9	132,500	6570,8
10	134,800	6576,1
11	137,000	6581,2
12	138,700	6585,1
13	139,900	6587,0
14	141,000	6590,4
15	141,400	6591,0
16	142,100	6592,9
17	142,100	6592,9
18	142,700	6594,3
19	142,100	6594,3
20	142,700	6594,3
21	143,300	6595,7
22	143,300	6595,7
23	143,300	6595,7
24	143,800	6594,8
25	143,800	6596,8
26	143,800	6594,8
27	143,800	6596,8
28	143,800	6594,8
29	143,800	6596,8
30	143,800	6594,8
50	144,400	6598,2
70	145,000	6599,4
90	145,000	6599,4
110	145,000	6599,4
130	144,100	6607,2
150	147,200	6608,7
170	147,200	6608,7



NOTES:

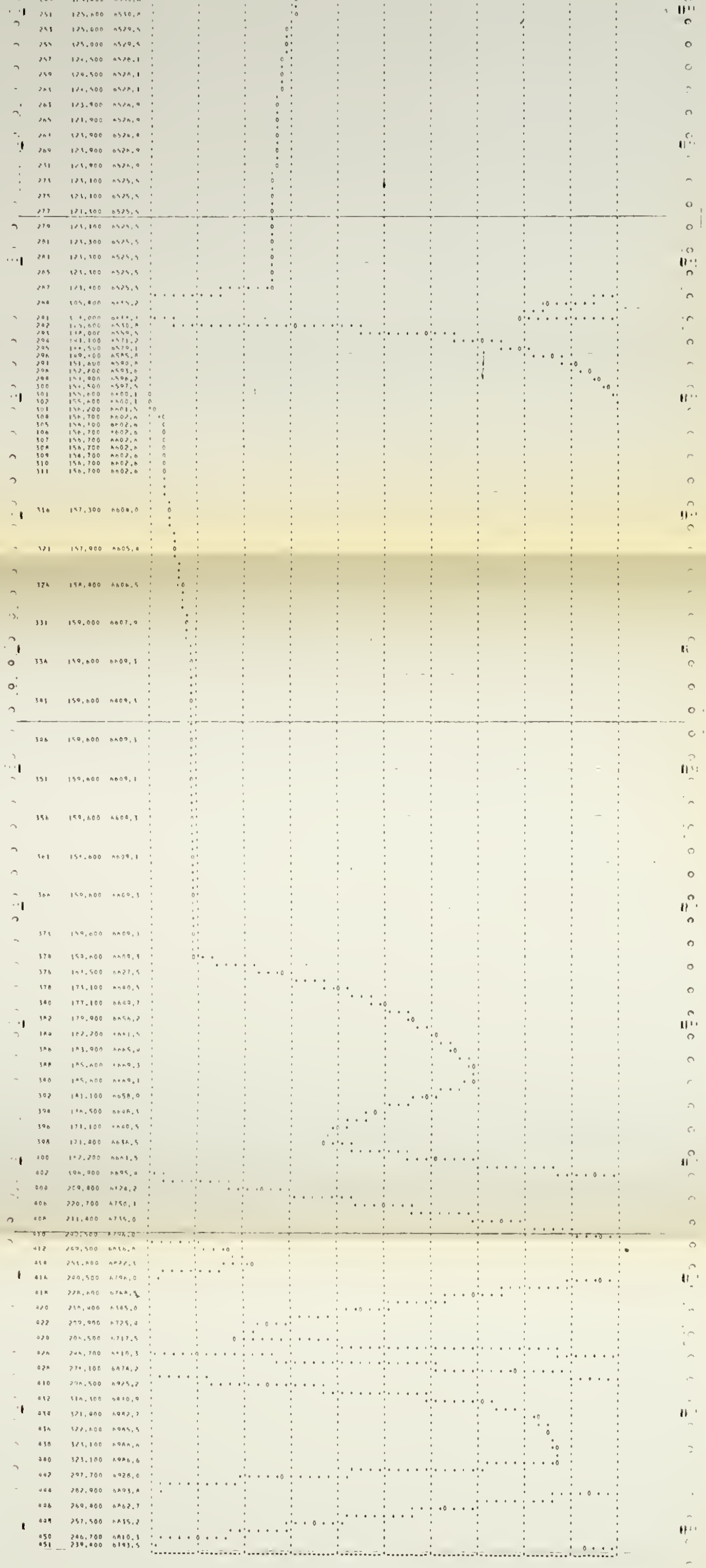
C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 2

HORE 5G 17 D51 02 DATE 09NOV1N CAMDDECK 2 JOHNSION SIEH

* * * * WATER POTENTIAL CHANGE INDICATOR (1 INCH = 10 1E11) * * * *

TIME (MIN)	PRESSURE (PSI)	POTENTIAL (1E11)
1	28,800	6307.5
5	161,300	6613.2
10	161,300	6613.2
15	161,300	6613.2
20	161,300	6613.2
25	161,300	6613.2
30	161,300	6613.2
35	161,300	6613.2
40	161,300	6613.2
45	161,300	6613.2
0	45,200	6145.5
1	61,300	6387.1
2	90,100	6429.0
3	98,900	6445.1
4	113,100	6502.0
5	122,800	6529.0
6	129,900	6530.1
7	135,300	6555.5
8	142,000	6568.7
9	145,900	6576.5
10	148,200	6583.0
11	150,500	6588.3
12	152,800	6593.6
13	153,900	6598.2
14	155,000	6599.1
15	155,600	6600.1
16	155,600	6600.1
17	156,200	6601.5
18	156,200	6601.5
19	156,900	6602.6
20	156,700	6602.6
21	156,100	6602.6
22	156,100	6602.6
23	157,300	6604.0
24	157,300	6604.0
25	157,100	6604.0
26	157,300	6604.0
27	157,900	6605.0
28	157,900	6605.0
29	157,900	6605.0
30	158,400	6606.5
50	159,000	6607.9
70	159,600	6609.3
90	159,600	6609.3
110	159,600	6609.3
130	159,600	6609.3
150	159,600	6609.3
170	160,100	6610.5
190	160,700	6611.8



NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 2

Date: Nov. 9, 1974 Interval tested: 788-808 ft

Pressure gauge: , Johnston (Lower)

Formation tested: Evacuation Creek formation

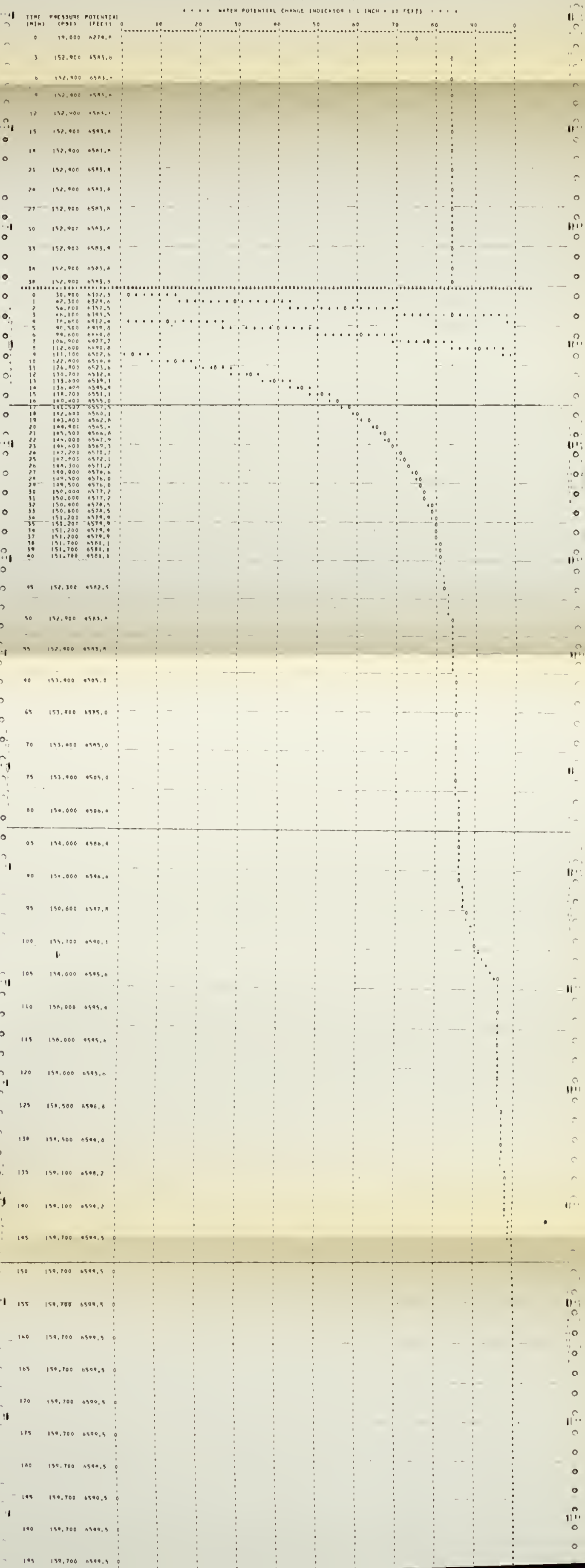
Golder Associates

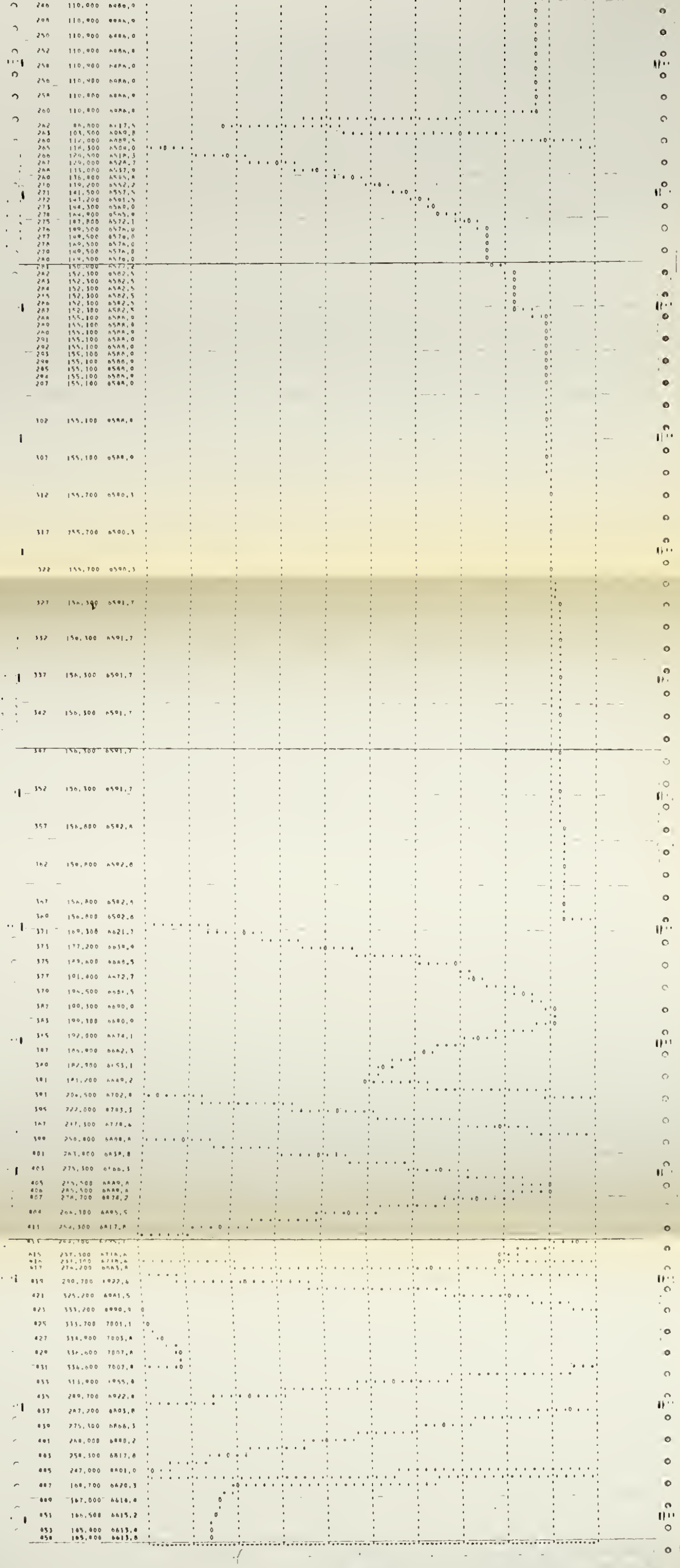
SG - 17 D.S.T. - 2

MOPI SC 17 OBT 05 DATE 11NOV70 CARDDECK 3 JOHNSTON BIEM

* * * * WATER POTENTIAL CHANGE INDICATION 1 1 INCH = 10 FEETS * * * *

TIME (MIN)	PRESSURE (PSI)	POTENTIAL (FEET)
0	19.000	6270.8
3	152.900	6583.8
6	152.900	6583.8
9	152.900	6583.8
12	152.900	6583.8
15	152.900	6583.8
18	152.900	6583.8
21	152.900	6583.8
24	152.900	6583.8
27	152.900	6583.8
30	152.900	6583.8
33	152.900	6583.8
36	152.900	6583.8
39	152.900	6583.8
0	30.900	6302.5
1	62.300	6328.6
2	56.800	6357.5
3	66.100	6365.5
4	78.600	6412.4
5	90.500	6419.8
6	98.600	6440.8
7	106.900	6477.7
8	112.600	6490.8
9	111.100	6502.6
10	122.800	6510.0
11	126.800	6523.6
12	130.700	6532.8
13	135.600	6539.1
14	136.400	6545.0
15	138.700	6551.1
16	140.400	6555.0
17	141.500	6557.5
18	142.600	6560.1
19	143.400	6562.8
20	144.400	6565.0
21	145.500	6566.8
22	146.000	6567.9
23	146.600	6569.3
24	147.200	6570.7
25	147.800	6572.1
26	148.300	6571.2
27	148.000	6574.6
28	149.500	6576.0
29	149.500	6576.0
30	150.000	6577.2
31	150.000	6577.2
32	150.400	6578.5
33	150.600	6578.5
34	151.200	6579.9
35	151.200	6579.9
36	151.200	6579.9
37	151.200	6579.9
38	151.700	6581.1
39	151.700	6581.1
40	151.700	6581.1
45	152.300	6582.5
50	152.900	6583.8
55	152.900	6583.8
60	153.400	6585.0
65	153.400	6585.0
70	153.400	6585.0
75	153.400	6585.0
80	154.000	6586.4
85	154.000	6586.4
90	154.000	6586.4
95	154.600	6587.8
100	155.700	6590.1
105	156.000	6595.6
110	156.000	6595.6
115	156.000	6595.6
120	156.000	6595.6
125	156.500	6596.8
130	156.500	6596.8
135	159.100	6598.2
140	159.100	6598.2
145	159.700	6599.5
150	159.700	6599.5
155	159.700	6599.5
160	159.700	6599.5
165	159.700	6599.5
170	159.700	6599.5
175	159.700	6599.5
180	159.700	6599.5
185	159.700	6599.5
190	159.700	6599.5
195	159.700	6599.5





NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 3

Date: Nov. 11, 1974 Interval tested: 822-869 ft.

Pressure gauge: Johnston (Upper)

Formation tested: Parachute Creek above the A Groove.

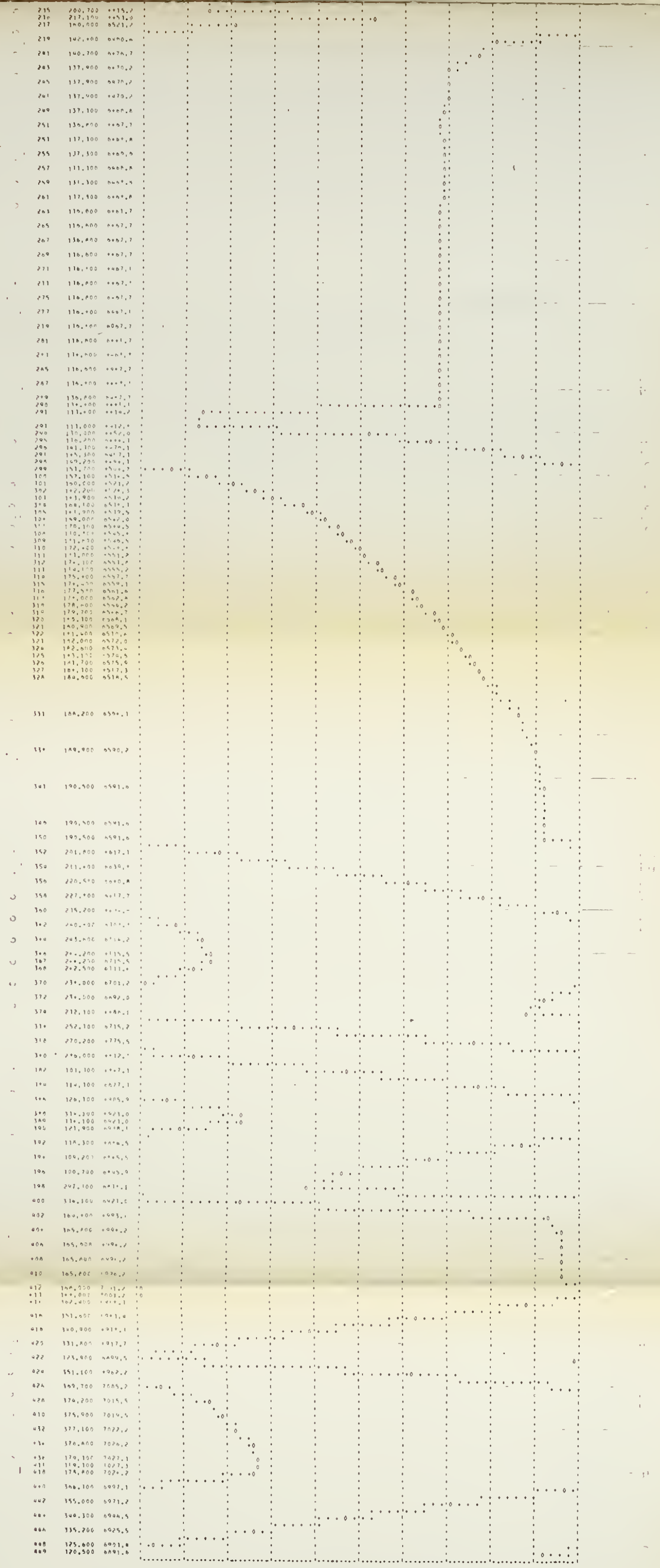
Golder Associates

SG - 17 D.S.T. - 3

ROW1 SG 17 DST 04 DPTF 12SDV10 CARDDECK # JOHNSTON STIM

* * * * WATER POTENTIAL CHANGE INDICATOR (1 INCH = 10 FEET) * * * *

TIME (MIN)	PRESSURE (PSI)	POTENTIAL (FEET)
0	20,800	6219,5
3	192,700	6594,7
6	193,900	6599,5
9	194,000	6600,0
12	194,000	6600,0
15	194,000	6600,0
18	194,000	6600,0
21	194,000	6600,0
24	194,000	6600,0
27	194,000	6600,0
30	194,000	6600,0
33	194,000	6600,0
36	194,000	6600,0
39	194,000	6600,0
0	41,800	6249,5
1	66,900	6280,2
2	91,200	6299,1
3	80,600	6300,0
4	78,300	6329,2
5	88,200	6340,1
6	90,600	6340,6
7	95,300	6339,0
8	105,100	6385,9
9	113,000	6413,2
10	120,600	6429,8
11	126,500	6444,1
12	131,100	6451,6
13	135,600	6460,9
14	139,000	6463,2
15	143,000	6463,1
16	147,500	6492,1
17	151,500	6501,6
18	153,900	6509,5
19	157,700	6515,8
20	160,500	6522,6
21	162,900	6529,7
22	165,600	6531,2
23	167,100	6539,1
24	169,000	6542,8
25	170,100	6544,5
26	171,300	6547,1
27	172,600	6549,0
28	173,500	6552,0
29	174,100	6555,2
30	175,000	6557,7
31	176,000	6559,1
32	177,500	6561,8
33	178,000	6562,0
34	178,600	6564,2
35	179,700	6565,1
36	180,300	6566,1
37	180,900	6565,5
38	181,600	6567,0
39	182,000	6572,0
40	182,600	6571,6
41	182,800	6573,0
42	183,100	6574,5
43	181,700	6575,9
44	181,700	6575,9
45	184,300	6577,5
46	184,100	6577,1
47	184,600	6577,5
48	184,800	6578,5
49	185,600	6579,6
50	186,000	6581,2
51	186,500	6582,6
52	186,500	6582,6
53	187,100	6583,8
54	187,100	6581,8
55	188,700	6585,2
56	188,200	6586,1
57	188,600	6587,1
58	188,800	6587,7
59	189,000	6589,1
60	189,000	6589,1
70	191,100	6593,0
80	191,100	6593,0
90	192,200	6595,5
100	192,200	6595,5
110	192,200	6595,5
120	192,200	6595,5
130	192,200	6595,5
140	192,200	6595,5
150	192,200	6595,5
160	192,200	6595,5
170	192,200	6595,5
180	192,700	6596,1
190	193,900	6599,5



NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 4

Date: Nov. 12, 1974 Interval tested: 8666-919 ft.

Pressure gauge: Johnston (Lower)

Formation tested: Parachute Creek above the

BOTTOM OF BORE HOLE (FEET) + 1000.00

LOCATION OF RUN + SITE

BOTTOM OF PACKER UPPER + 1062.00

(FEET) MIDDLE + 1066.20

LOWER + .00

LENGTH OF PACKER (FEET) + 2.00

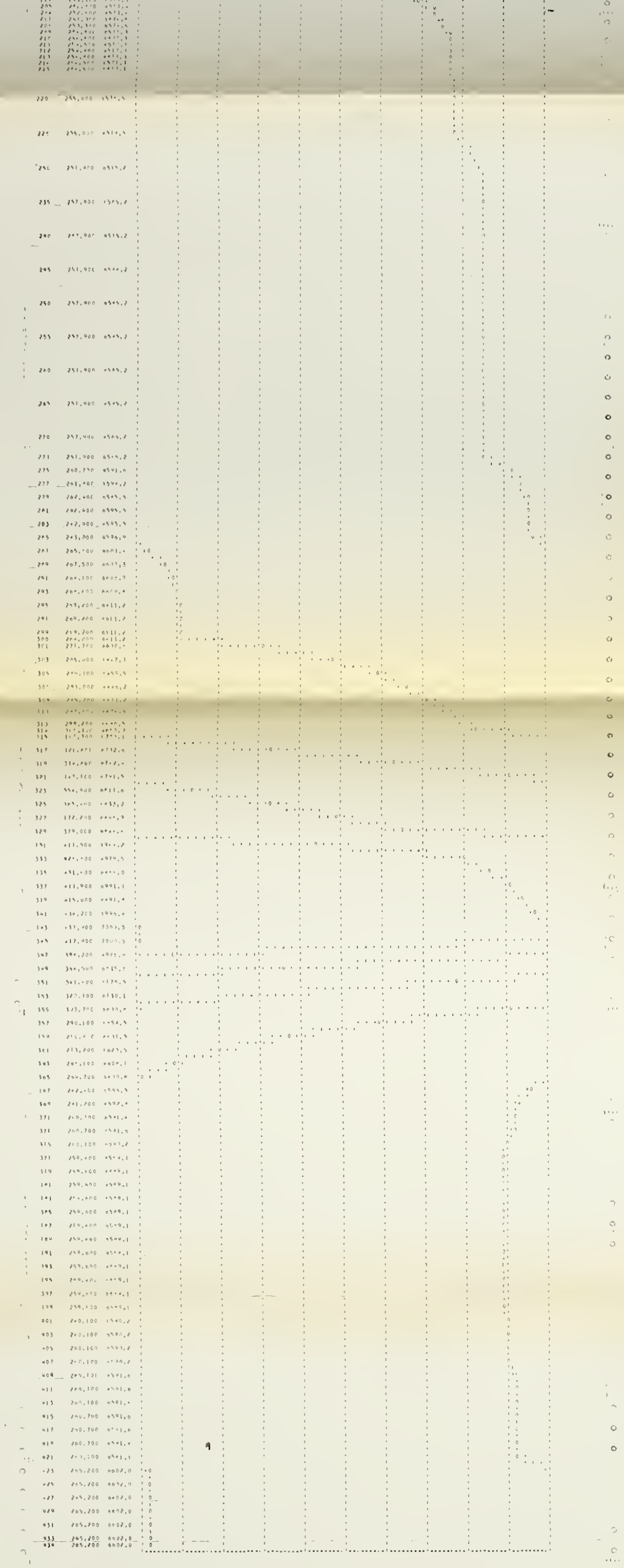
BORE HOLE DEPTH (FEET) + 1110.00

1018 RECORD CONTAINS 50 LINES

RUN 36 17 DEC 69 0411 2000:10 CONTROL 1 20000:: SITE

PRESSURE RECORDING RANGE EXPLORING 1 1 INCH = 10 PSIG

TIME (MIN)	PRESSURE (PSIG)	PRESSURE (FEET)
30	200.000	6566.9
2	255.000	6575.9
4	11.050	6622.1
6	58.100	6612.1
8	254.500	6573.9
9	253.100	6575.1
7	71.700	6155.5
8	255.000	6575.5
9	271.000	6521.5
10	214.900	6519.3
11	210.100	6475.9
12	195.000	6449.9
13	241.500	6567.3
14	214.100	6481.2
15	195.000	6461.1
16	251.900	6565.7
17	261.000	6592.9
18	269.200	6611.2
19	300.300	6681.1
20	110.000	6256.9
21	181.400	6000.8
22	259.100	6581.9
23	245.200	6682.7
24	105.900	6695.5
0	59.100	6126.1
5	253.900	6575.9
10	251.900	6575.9
15	253.900	6575.9
20	251.900	6575.9
25	253.900	6575.9
30	254.500	6577.3
0	71.700	6155.5
1	113.000	6255.7
2	150.100	6313.1
3	156.000	6391.4
4	132.400	6341.1
5	185.400	6481.7
6	197.100	6545.3
7	201.500	6564.8
8	216.100	6641.7
9	224.200	6512.7
10	232.900	6526.9
11	237.500	6539.1
12	241.900	6547.9
13	244.100	6551.7
14	247.100	6560.2
15	249.900	6560.2
16	249.900	6566.7
17	251.100	6569.5
18	251.600	6570.4
19	252.200	6572.7
20	252.200	6572.0
25	252.200	6572.0
30	252.200	6572.0
35	252.200	6572.0
40	252.200	6572.0
45	251.100	6570.5
50	251.000	6575.9
55	254.500	6577.3
60	254.500	6577.1
65	255.000	6578.5
70	255.000	6578.5
75	255.000	6578.5
80	255.000	6578.5
85	255.000	6578.5
90	255.000	6578.5
95	255.000	6578.5
100	255.000	6578.5
105	255.000	6578.5
110	255.000	6578.5
115	255.000	6578.5
120	255.000	6578.5
125	255.000	6578.5
127	255.000	6578.5
129	214.200	6420.5
130	210.100	6415.1
135	210.100	6415.1
140	210.100	6415.1
145	210.100	6415.1
150	210.100	6415.1
155	210.100	6415.1
160	210.100	6415.1
165	210.100	6415.1
170	210.100	6415.1
175	210.100	6415.1
180	210.100	6415.1
185	210.100	6415.1
188	210.100	6415.1
189	210.100	6415.1



NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 8

Date: Nov 20, 1974 Intervol tested: 10660-11160 ft.

Pressure gouge: Johnston (Middle)

Formation tested: Parachute Creek above the A Groove

Golder Associates

SG - 17 D.S.T. - 8

COLDER ASSOCIATES

PROGRAM - EDBAP

BORE SG 17 091 06 DATE 22NOV76 CARDDECK F JOHNSTON STEM

02/17/15-22152166

/COMMENT INTERVAL TESTED 1116-1166 FT. PARKEHUSE CREEK ABOVE THE A GROOVE

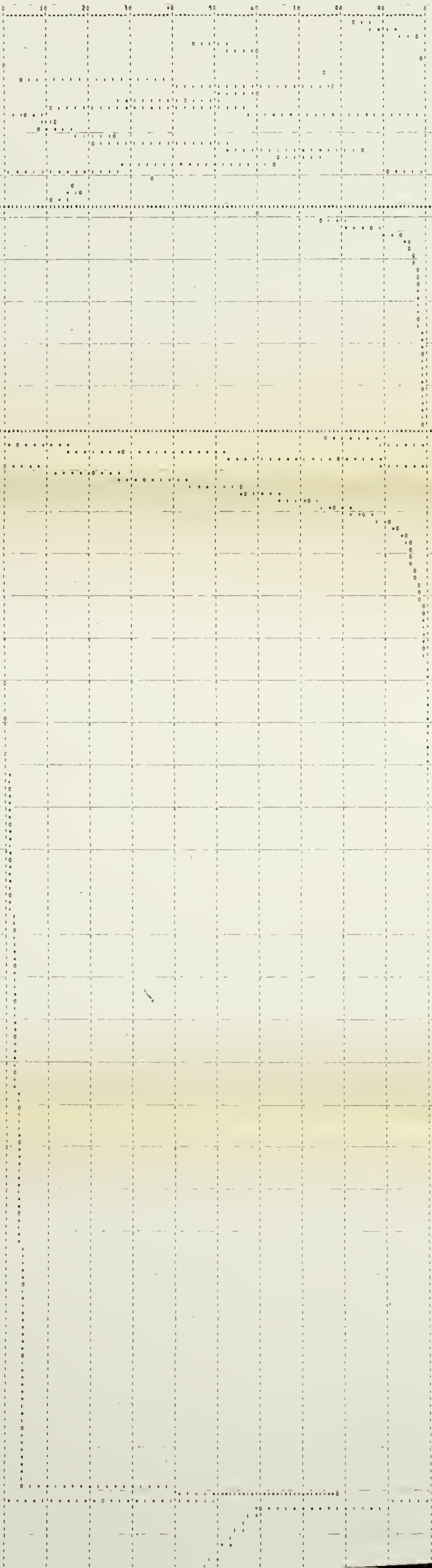
WELL DIAMETER (INCHES)	=	6.15
GROUND ELEVATION (FEET)	=	1036.00
BOMB NO.	=	45010
BOMB RANGE (PSI)	=	1600
POSITION OF BOMB (FEET)	=	1127.00
LOCATION OF BOMB	=	STEM
BOTTOM OF PACKERS (FEET) UPPER	=	1111.00
MIDDLE	=	1116.00
LOWER	=	.00
LENGTH OF PACKERS (FEET)	=	2.60
BOREHOLE DEPTH (FEET)	=	1166.00

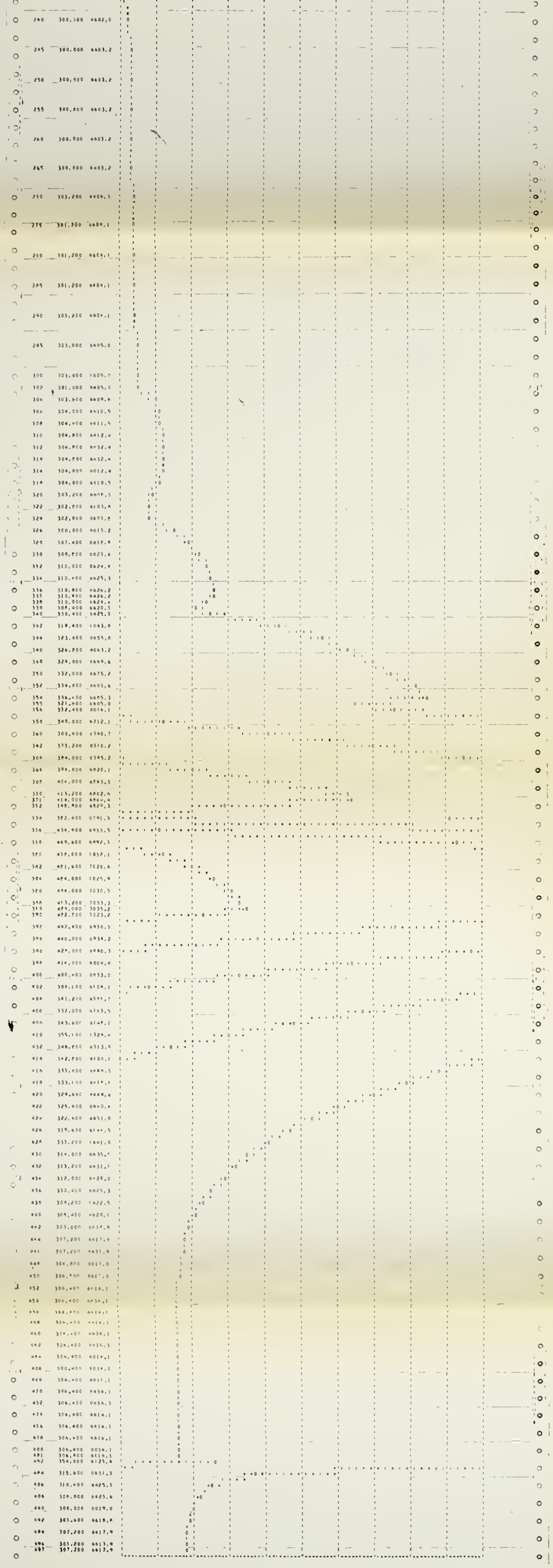
THIS RECORD CONTAINS 57 CARDS

BORE SG 17 091 06 DATE 22NOV76 CARDDECK F JOHNSTON STEM

. . . . WATER POTENTIAL CHANGE INDICATOR (1 INCH = 10 FEET) . . . .

TIME (MIN)	PRESSURE (PSI)	POTENTIAL (FEET)
0	291,900	6542,6
2	294,100	6540,1
3	145,550	6240,0
4	152,300	6260,5
5	294,100	6509,2
6	299,500	6450,2
7	202,100	6375,4
8	101,200	6424,1
9	113,200	6417,9
10	201,600	6559,5
11	274,700	6512,6
12	260,100	6510,4
13	301,600	6605,0
14	304,800	6612,4
15	102,800	6431,8
16	310,800	6624,2
17	309,400	6420,1
18	336,400	6665,1
19	121,600	6665,0
20	614,000	0864,0
21	382,400	6711,5
22	688,000	1015,2
23	306,600	6611,1
24	307,200	6611,4
25	306,400	6611,5
0	152,300	6260,5
1	288,100	6515,2
2	291,600	6501,2
3	296,100	6561,1
4	281,500	6565,5
5	281,900	6566,5
6	288,300	6587,8
7	290,300	6561,6
8	290,100	6580,3
9	298,100	6588,3
10	298,100	6560,3
15	298,100	6584,3
20	296,100	6586,2
25	299,100	6586,2
30	299,100	6586,2
0	202,100	6315,4
1	211,600	6402,0
2	221,100	6421,5
3	247,100	6479,2
4	255,600	6406,5
5	265,100	6520,8
6	270,300	6532,8
7	280,300	6555,8
8	280,100	6556,8
9	281,500	6512,5
10	286,600	6518,0
11	283,100	6585,4
12	285,500	6580,4
13	286,100	6592,6
14	291,100	6594,6
15	287,500	6505,5
16	281,600	6586,5
17	291,000	6586,5
18	281,600	6584,5
19	298,300	6591,8
20	286,300	0561,8
21	290,300	6590,3
22	290,100	6589,1
23	285,700	6506,5
24	288,100	0586,2
25	298,100	6586,2
30	299,100	6586,2
35	290,500	6600,2
40	288,500	6600,2
45	288,500	6600,2
50	299,600	6601,1
55	288,900	6601,1
60	299,600	6601,1
65	299,900	6601,1
70	300,300	6602,0
75	300,300	6602,0
80	300,300	6602,0
85	300,300	6602,0
90	300,100	6602,0
95	308,800	6603,2
100	300,800	6603,2
110	300,000	6603,2
120	301,200	6606,1
130	301,200	6600,1
140	301,200	6606,1
148	301,200	6606,1
149	333,200	6677,0
150	308,200	0022,5
151	281,900	6550,5





NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 9

Date: Nov. 22, 1974 Interval tested: 1116-1166 ft.

Pressure gauge: Johnston (Lower)

Formation tested: Parachute Creek above the

WELL DIAMETER (INCHES) : 7.75

GROUND ELEVATION (FEET) : [illegible]

MODEL [illegible] : [illegible]

BOREHOLE FLUID (FEET) : [illegible]

POSITION OF [illegible] (FEET) : [illegible]

LOCATION OF [illegible] : [illegible]

NOTION OF PADDLES UPHOLE : 1160.00

(FEET) MIDDLE : 1188.00

LOWER : [illegible]

LENGTH OF PADDLES (FEET) : 2.00

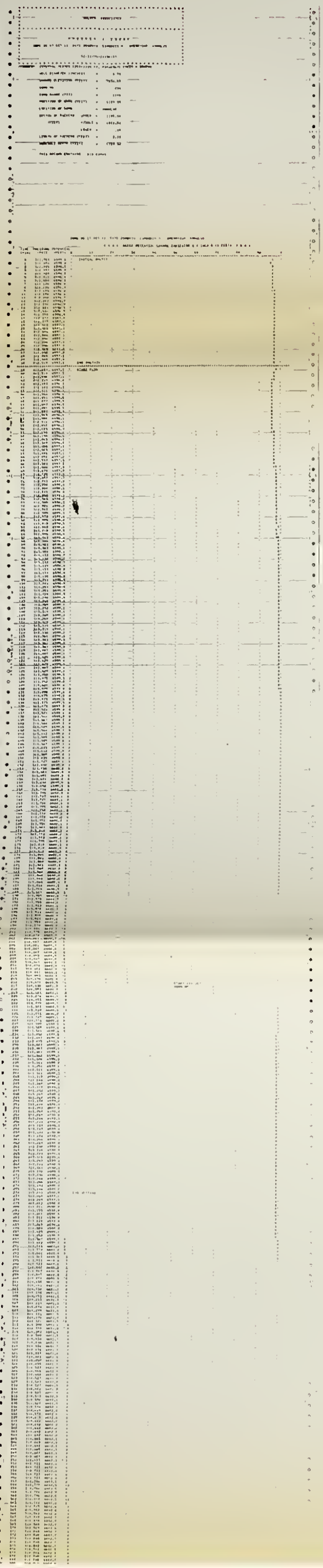
BOREHOLE DEPTH (FEET) : 1212.00

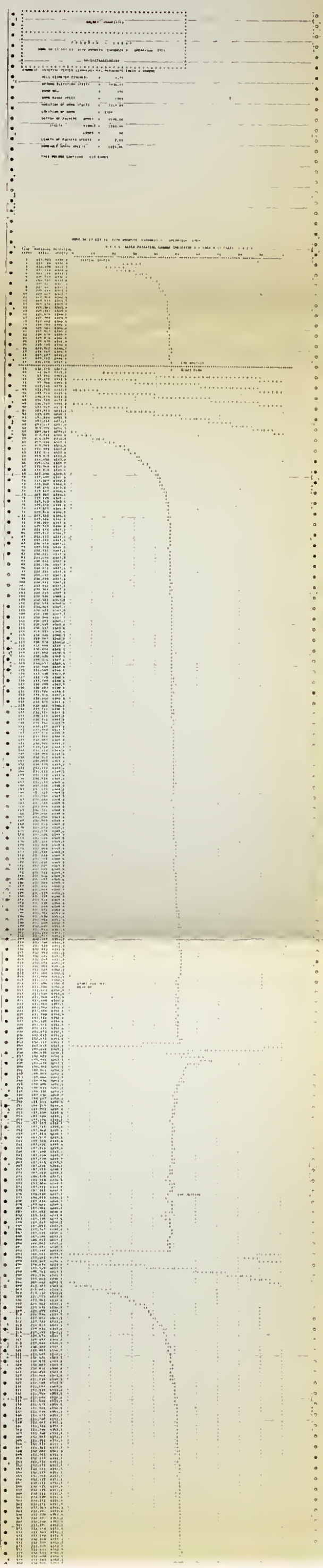
THIS RECORD CONTAINS 56 CARDS

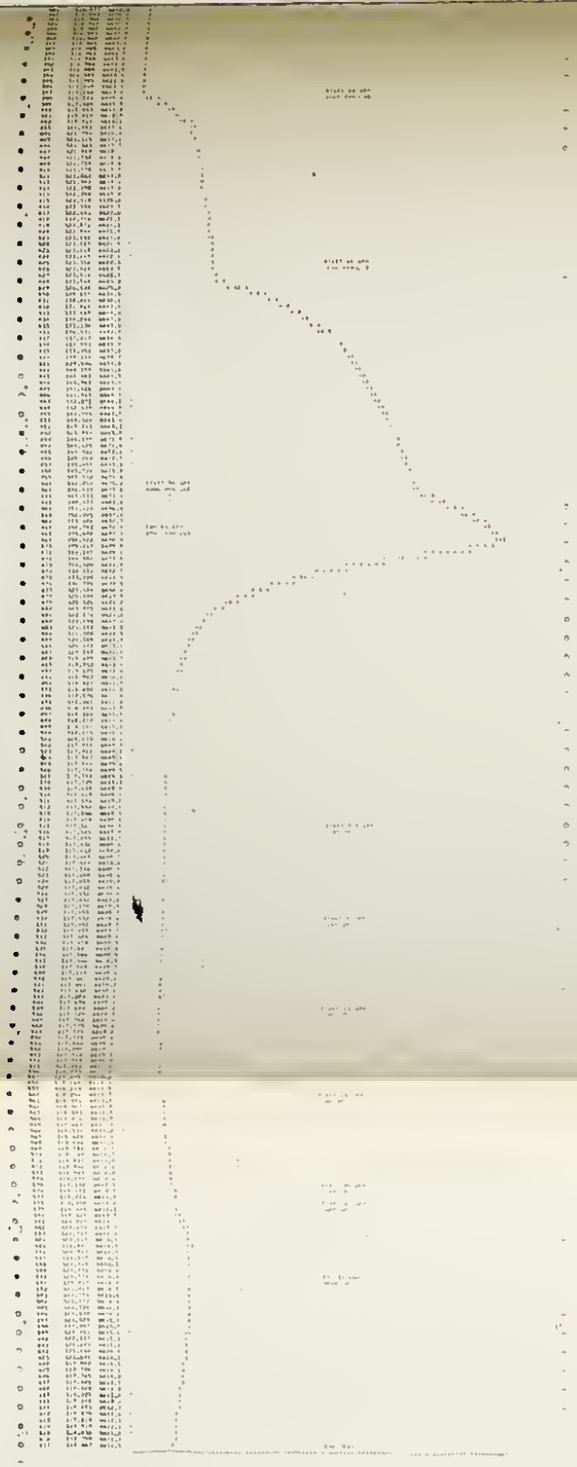
HOPE IG 11 OSI 10 0471 2310476 CHUDECI G JOHNSION 3114

* * * * WATER POTENTIAL CHANGE INDICATOR (1 INCH = 10 FEET) * * * *

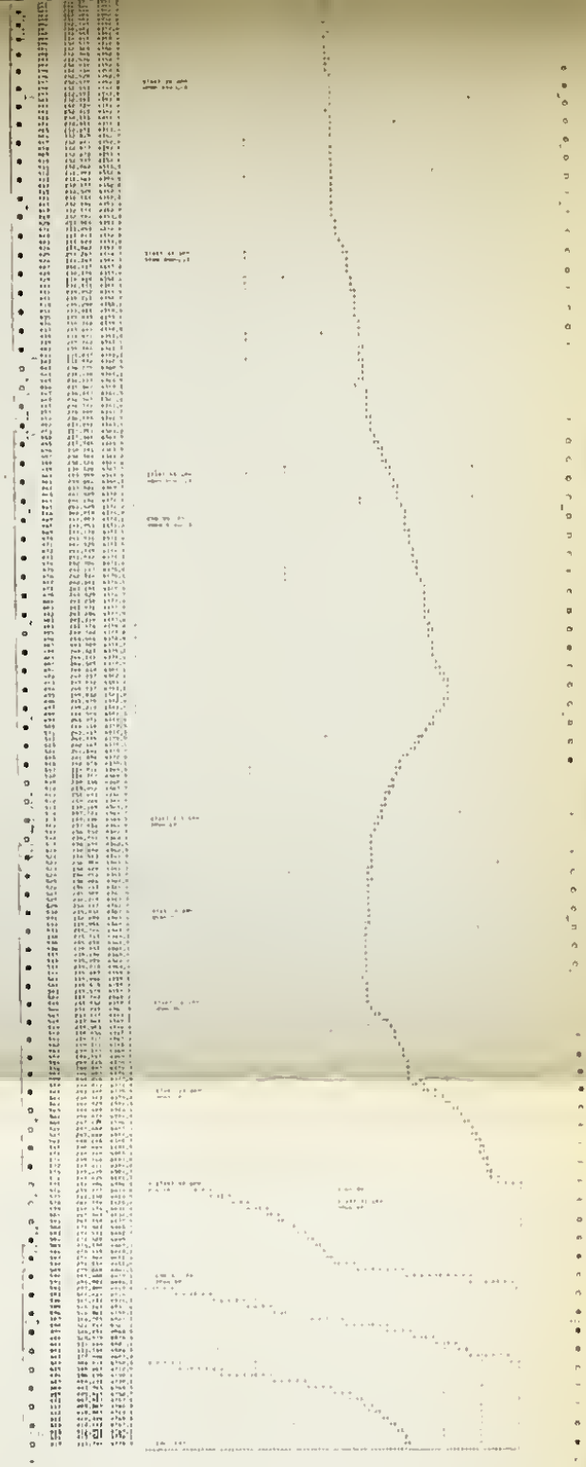
TIME (MIN)	PRESSURE (PSI)	POTENTIAL (FEET)
0	197.600	6313.1
1	191.100	6313.9
2	322.000	6602.1
3	322.400	6603.0
4	325.000	6610.6
5	326.800	6612.2
6	326.800	6613.2
7	327.200	6614.1
8	327.600	6615.0
9	327.600	6615.0
10	326.600	6612.7
11	328.000	6615.9
12	328.000	6615.8
13	328.400	6616.8
14	328.400	6616.8
15	328.400	6616.8
20	328.800	6617.8
25	328.600	6611.8
30	328.200	6616.1
32	323.200	6604.8
34	328.600	6616.1
36	329.200	6618.1
38	328.200	6616.7
39	281.500	6467.1
40	281.500	6514.1
41	316.000	6514.1
42	119.800	6504.7
43	121.200	6504.9
44	324.600	6614.5
45	326.000	6611.1
46	326.000	6611.2
47	326.800	6611.2
48	121.600	6515.0
49	325.000	6615.9
50	326.000	6615.9
51	328.400	6616.7
52	329.200	6616.1
53	328.800	6616.8
54	328.800	6616.9
55	328.800	6611.8
56	328.000	6617.4
57	329.200	6618.7
58	329.200	6618.7
59	329.200	6618.7
60	328.200	6618.7
70	328.200	6618.1
80	329.600	6619.8
90	330.000	6620.5
100	330.000	6620.5
110	330.800	6621.5
120	330.800	6622.1
130	330.800	6622.8
140	330.800	6622.8
150	330.800	6622.8
160	331.200	6621.1
170	331.800	6626.2
180	331.400	6626.2
190	331.000	6626.2
192	332.000	6625.2
194	340.000	6643.6
0	318.000	6581.8
1	318.400	6585.5
2	316.000	6588.2
3	317.200	6591.0
4	317.200	6591.0
5	318.800	6593.1
6	316.000	6595.1
7	318.800	6593.1
8	318.400	6518.2
9	316.400	6509.2
10	316.400	6508.2
15	315.600	6507.1
20	315.200	6506.8
25	313.200	6506.8
30	314.800	6505.5
35	314.000	6505.5







ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

II B-268

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 Drill stem test no 11

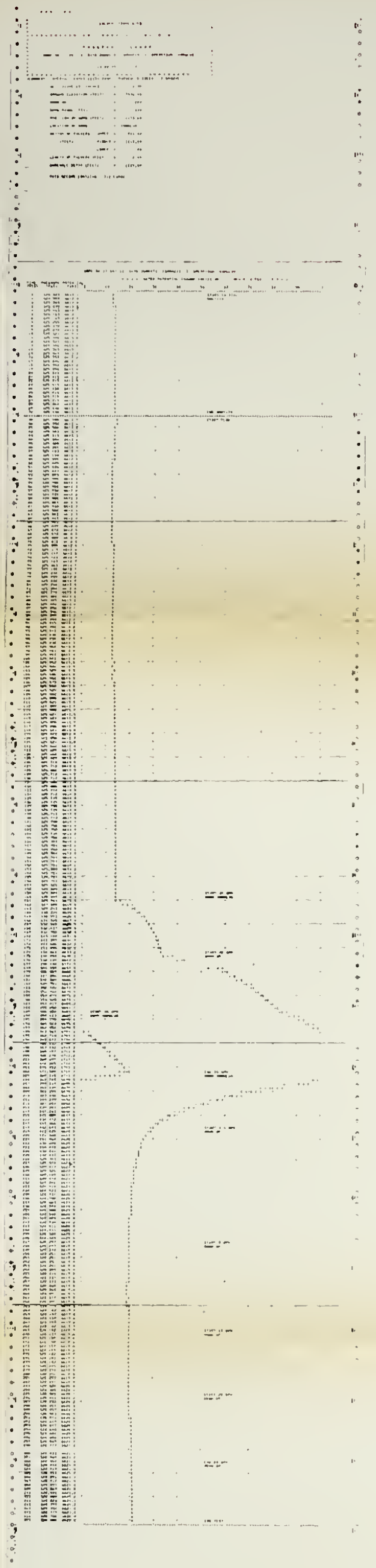
Date: Nov. 25, 1974 Interval tested: 1200-1224 ft.

Pressure gauges. Sperry Sun

Formation tested. Parachute Creek A Groove

Golder Associates

SG- 17 D.S.T.- 11



ANNULUS PRESSURE RESPONSE

STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 Drill stem test no 12

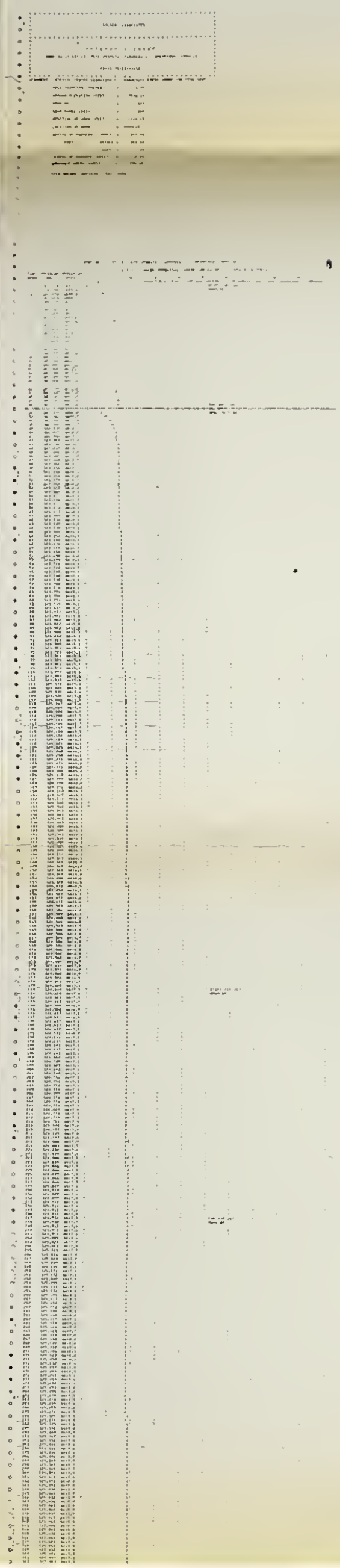
Date Nov. 26, 1974 Interval tested 1215-1224 ft.

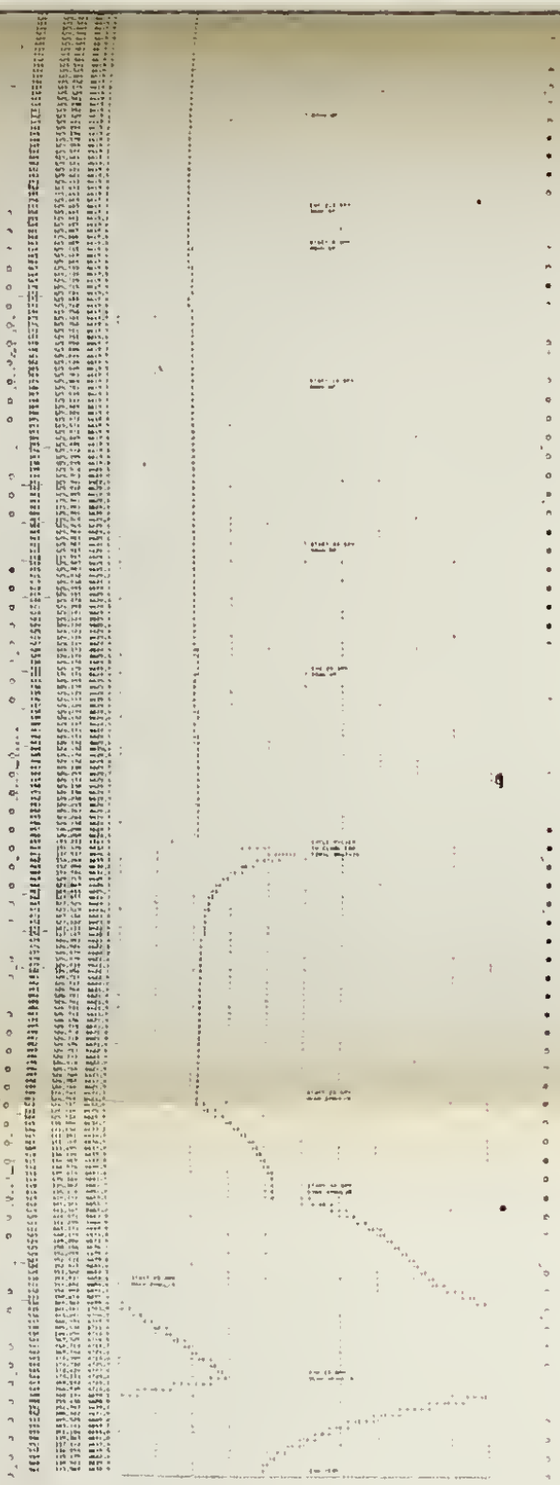
Pressure gauges Sperry Sun & Johnston

Formation tested Parachute Creek A Groove

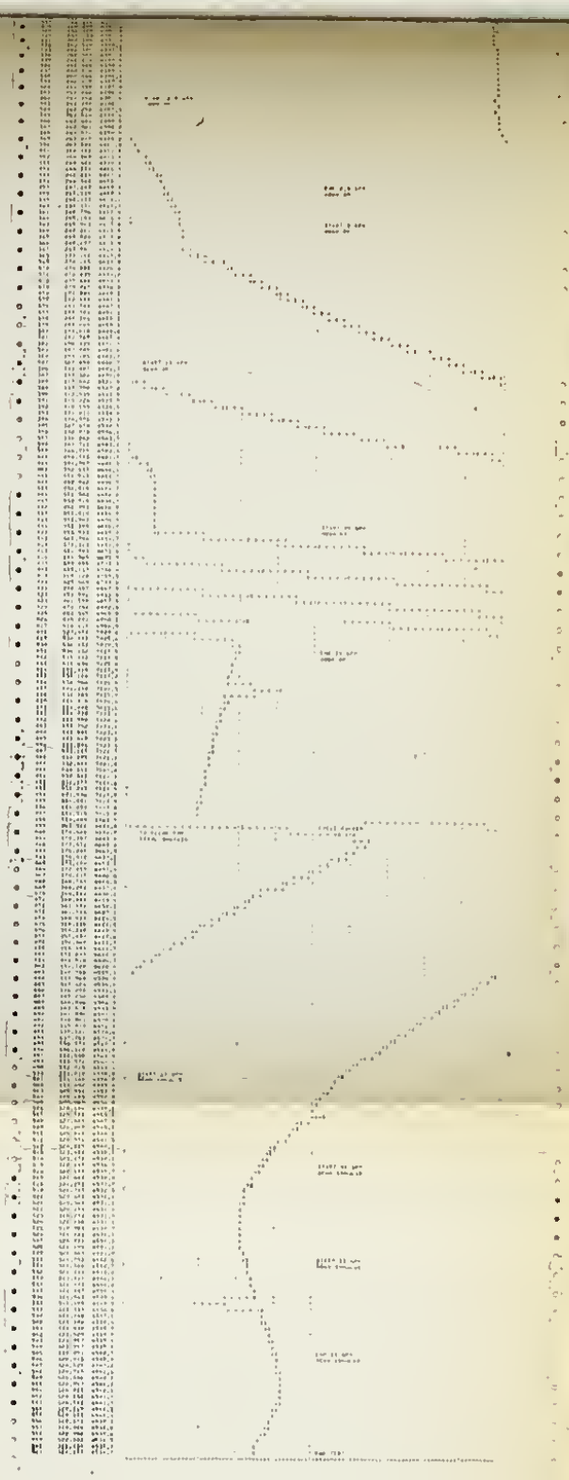
Golder Associates

SG- 17 D.S.T.- 12





ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

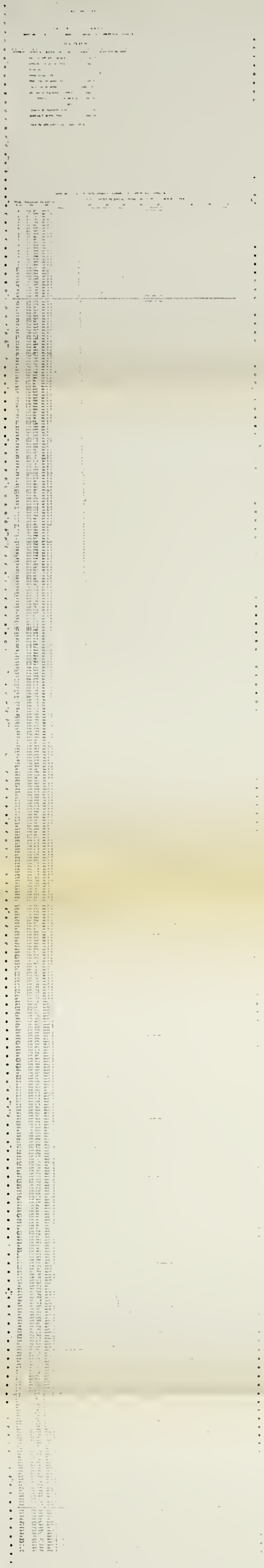
NOTES:

C-b TRACT HYDROLOGY

Borehole no	17	Drill stem test no	13
Date	Nov. 27, 1974	Interval tested	1220-1250 ft.
Pressure gauges	Sperry Sun		
Formation tested	Parachute Creek above the mine roof.		

Golder Associates

SG- 17 D.S.T.- 13



ANNULUS PRESSURE RESPONSE

STEM PRESSURE RESPONSE

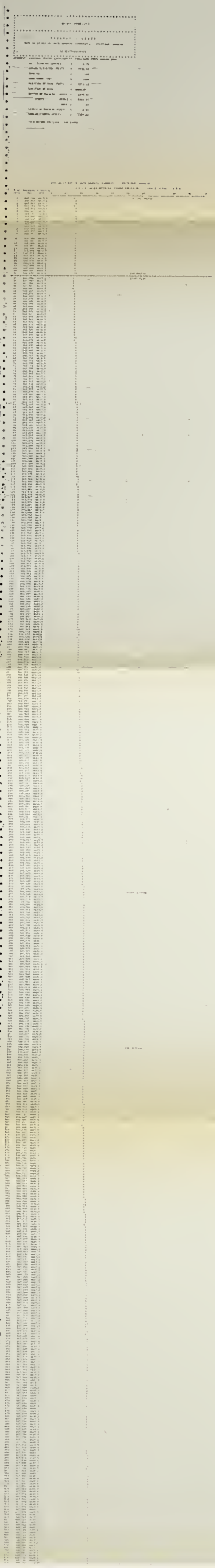
NOTES:

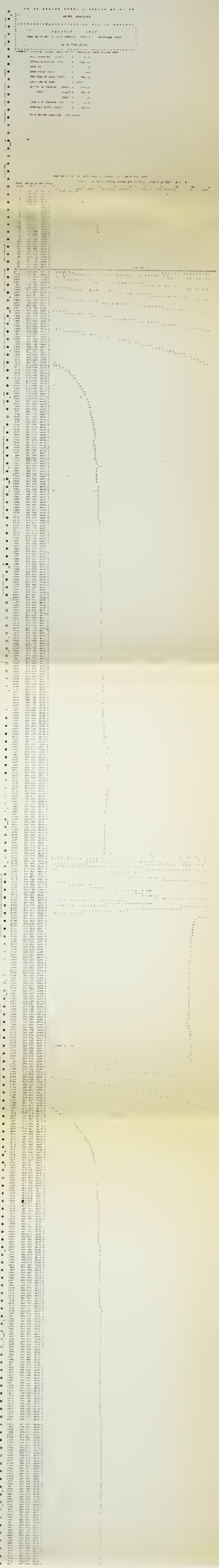
C-b TRACT HYDROLOGY

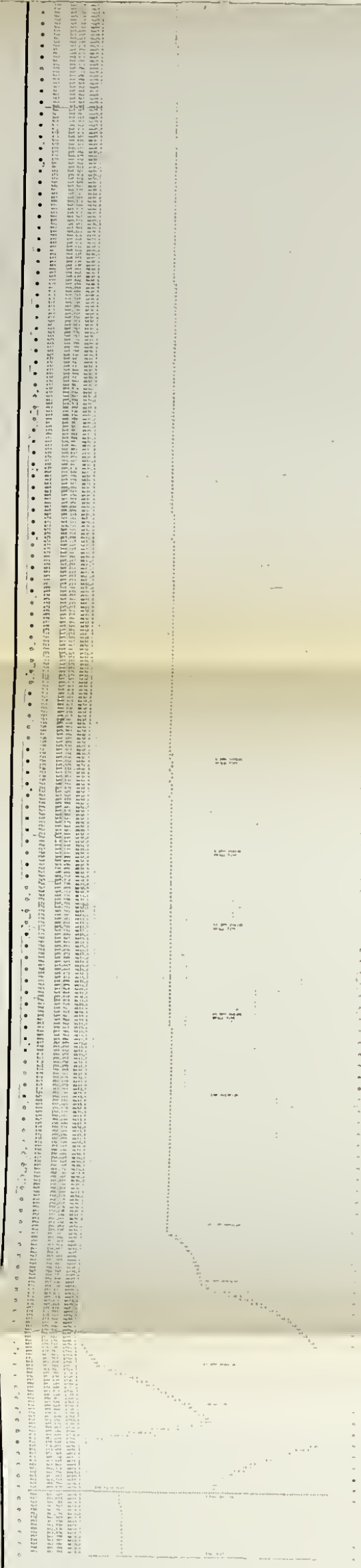
Borehole no	17	Drill stem test no	14
Date	Nov. 28, 1974	Interval tested	1251-1280 ft
Pressure gauges	Sperry Sun		
Formation tested	Parachute Creek; mine roof		

Golder Associates

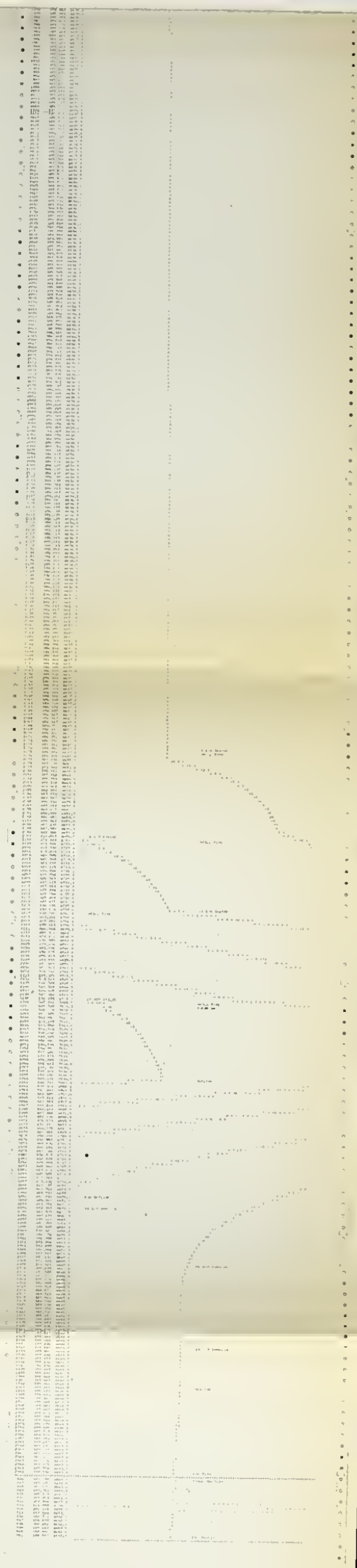
SG- 17 D.ST- 14







ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no 15

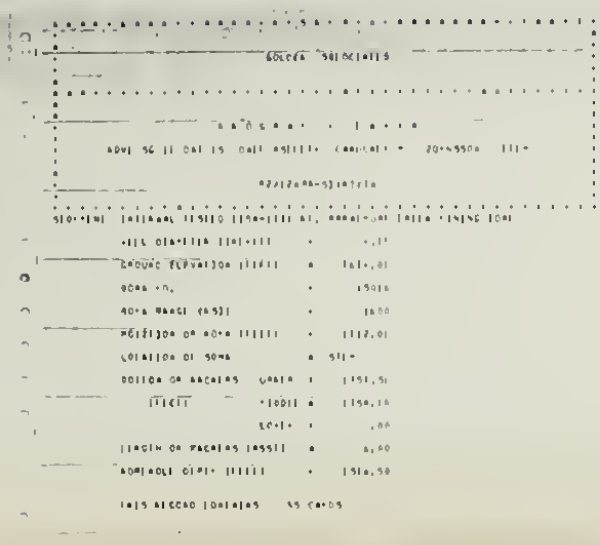
Date Nov 30, 1974 Interval tested 1280-1309ft

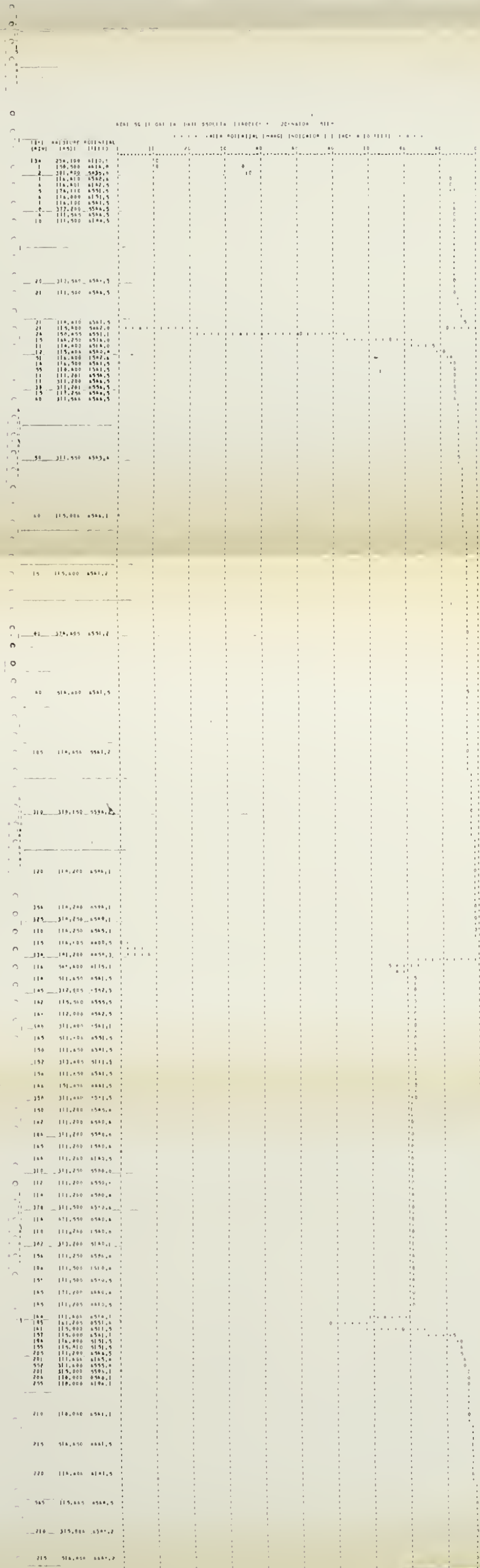
Pressure gauges Sperry Sun

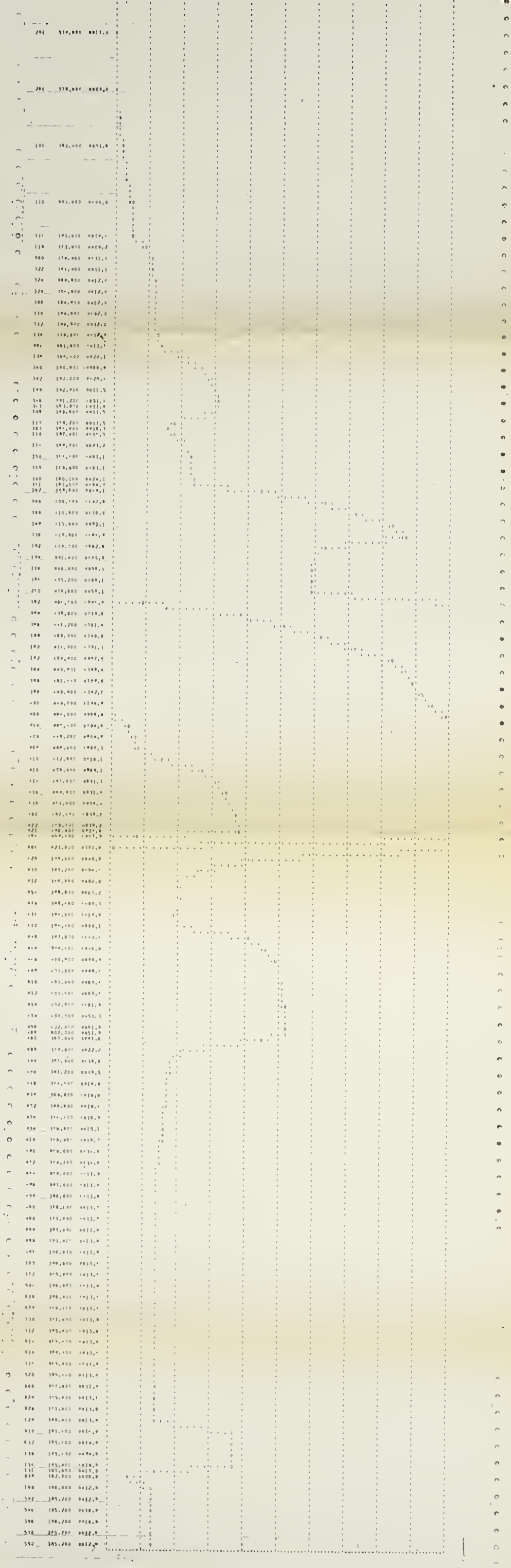
Formation tested Parachute Creek Mining Zone

Golder Associates

SG - 17 D.S.T. - 15







NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 16

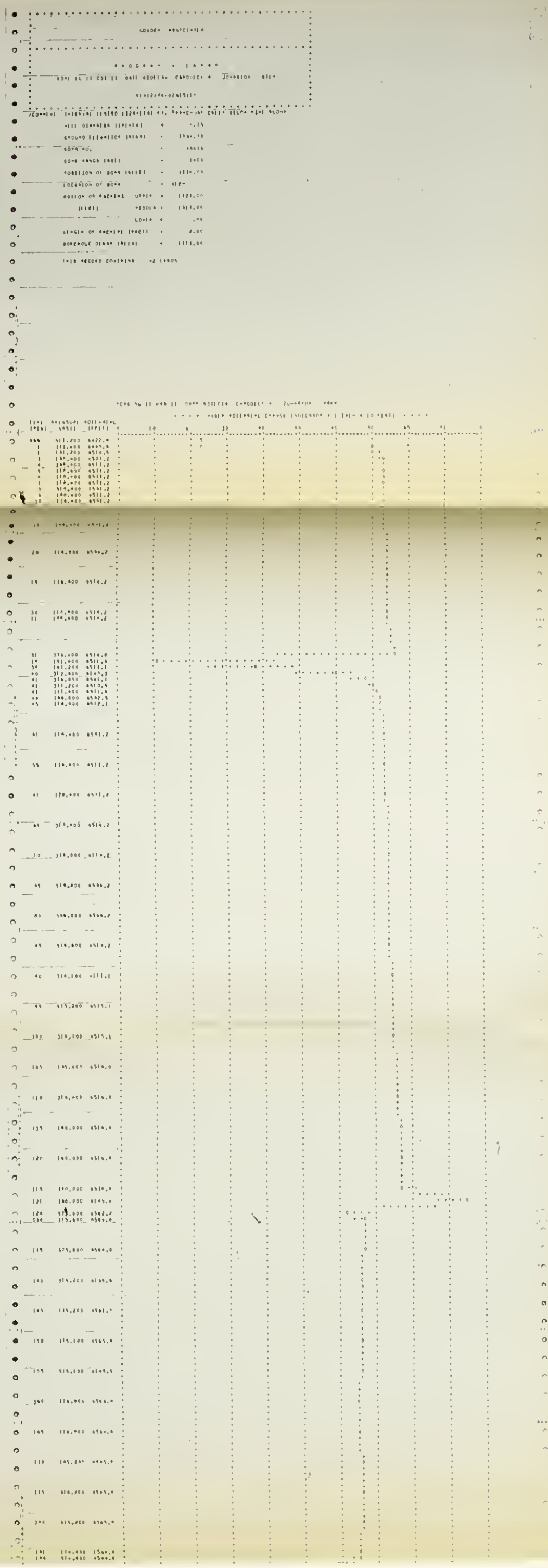
Date: Dec 2, 1974 Interval tested: 1308-1336ft

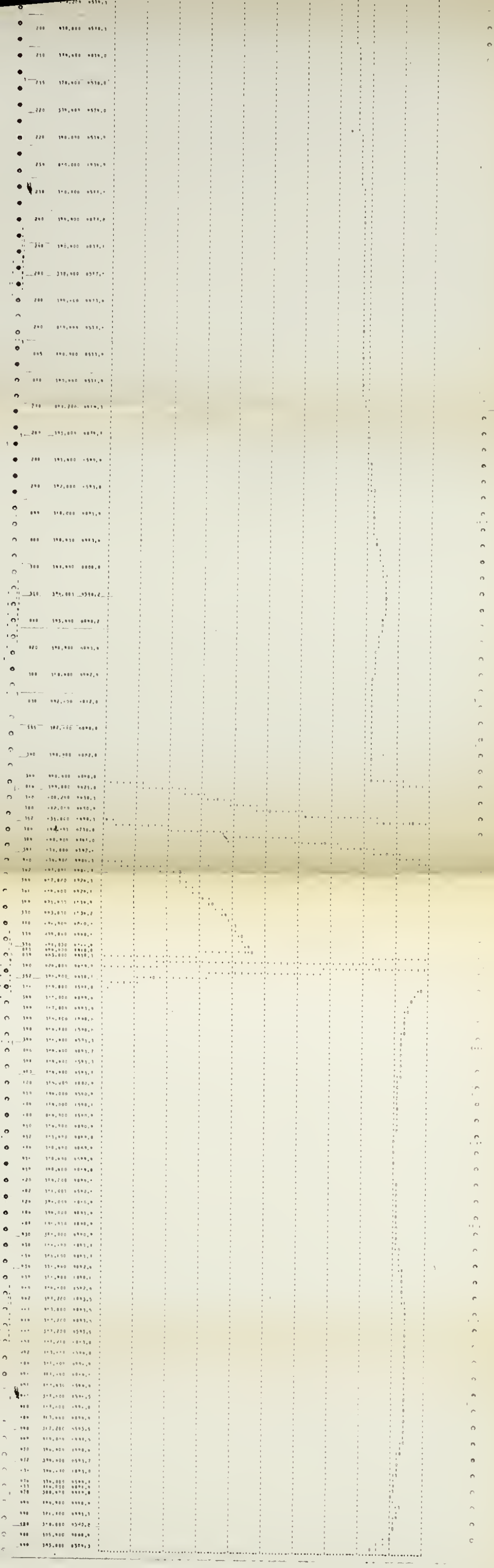
Pressure gauge: Johnston (Lower)

Formation tested: Parachute Creek mine floor

Golder Associates

SG - 17 D.S.T. - 16





NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 — Drill stem test no. 17

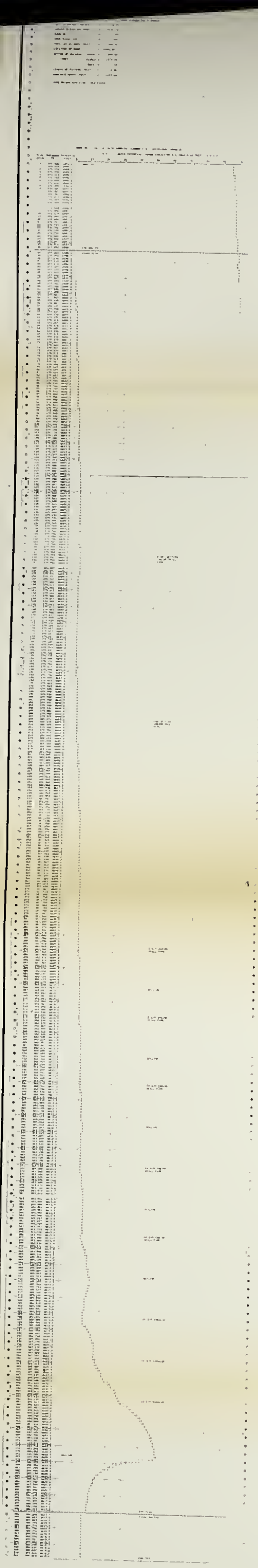
Date: Dec 3, 1974 — Interval tested: 1327-1374 ft

Pressure gauge: Johnston (Lower)

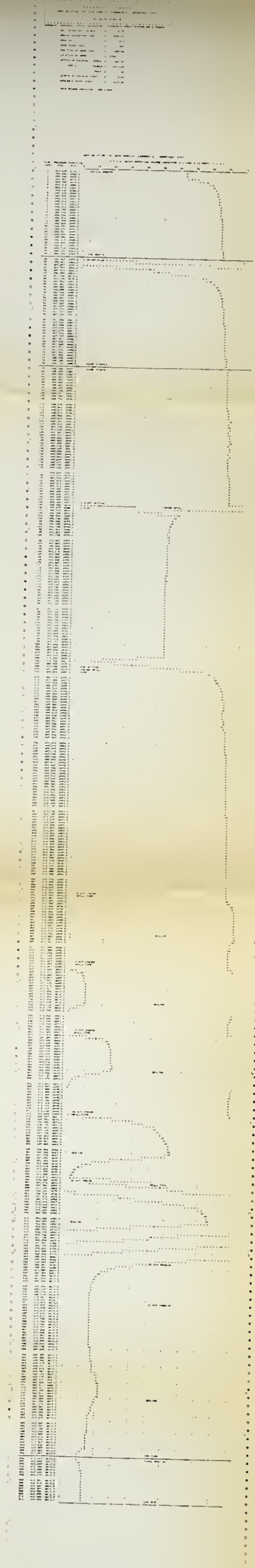
Formation tested: Parachute Creek below the mine floor

Golder Associates

SG - 17 — DST



ANNULUS PRESSURE RESPONSE



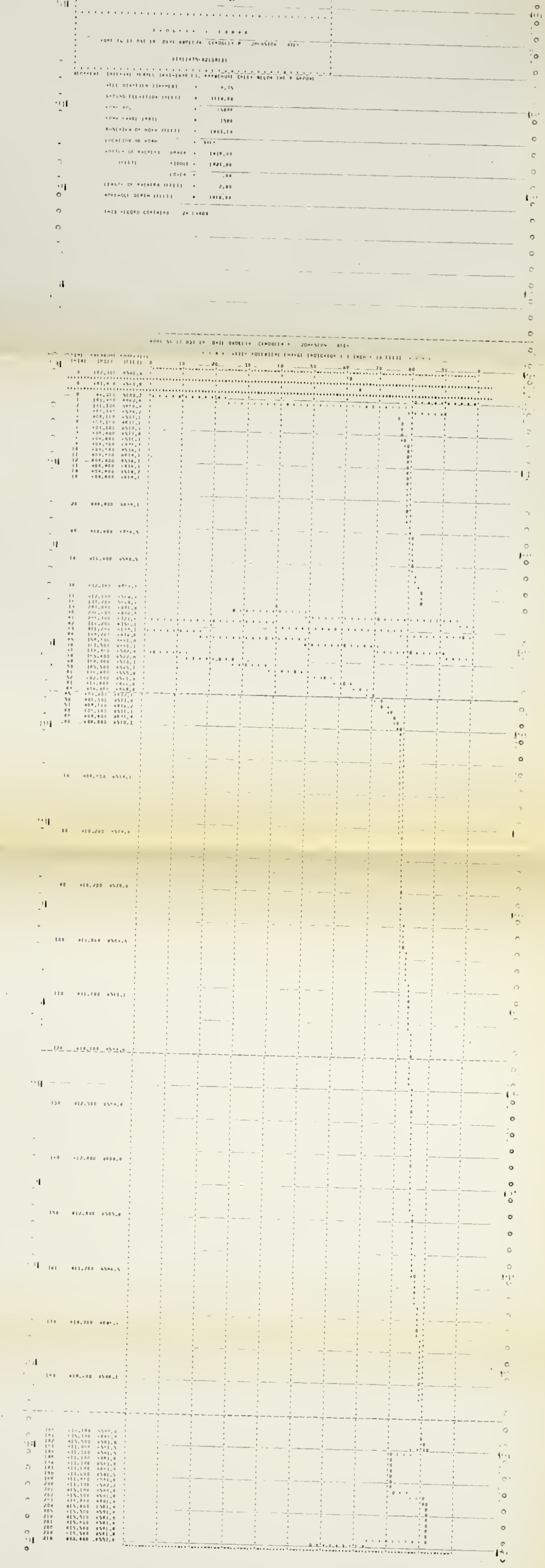
STEM PRESSURE RESPONSE

II B-275

NOTES:

C-b TRACT HYDROLOGY

Borehole no	17	Drill stem test no	18
Date	Dec 4,	Interval tested	1373-1419 ft.
Pressure gauges	Sperry Sun		
Formation tested	Parachute Creek straddling B Groove		



NOTES:

1. Test aborted and rerun as D.S.T. 20

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 19

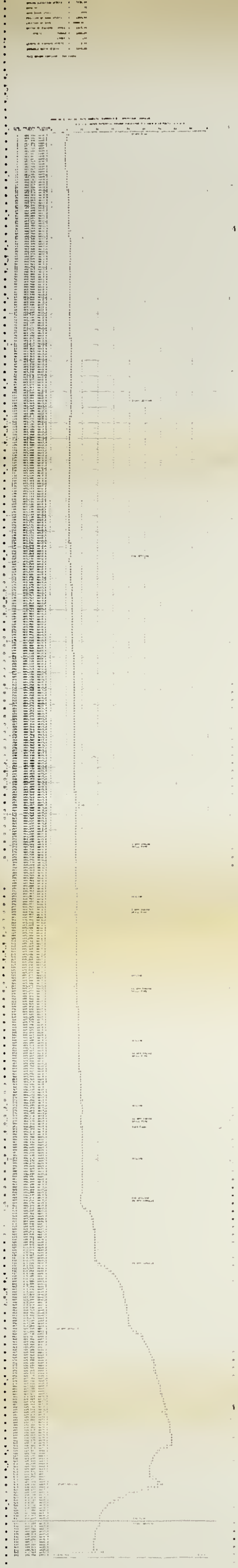
Date: Dec. 6, 1974 Interval tested: 1423-1470 ft

Pressure gauges: Johnston (Upper)

Formation tested: Parachute Creek below the B Groove

Golder Associates

SG - 17 D.S.T. - 19



ANNULUS PRESSURE RESPONSE

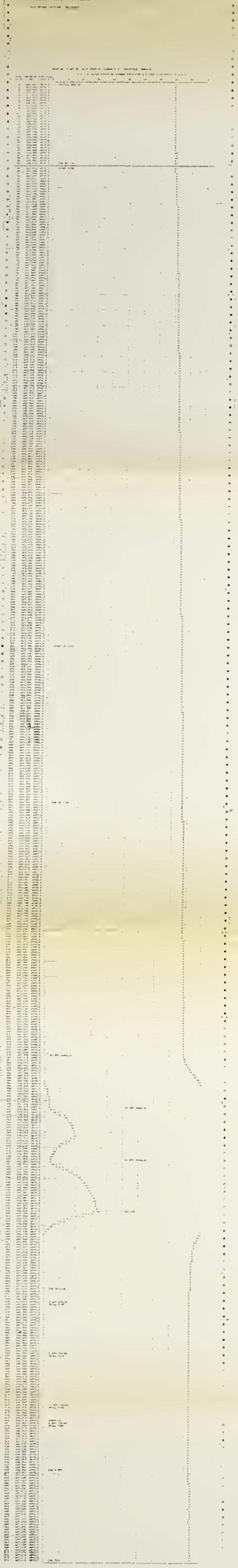
STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 Drill stem test no 20

Date Dec 6 1974

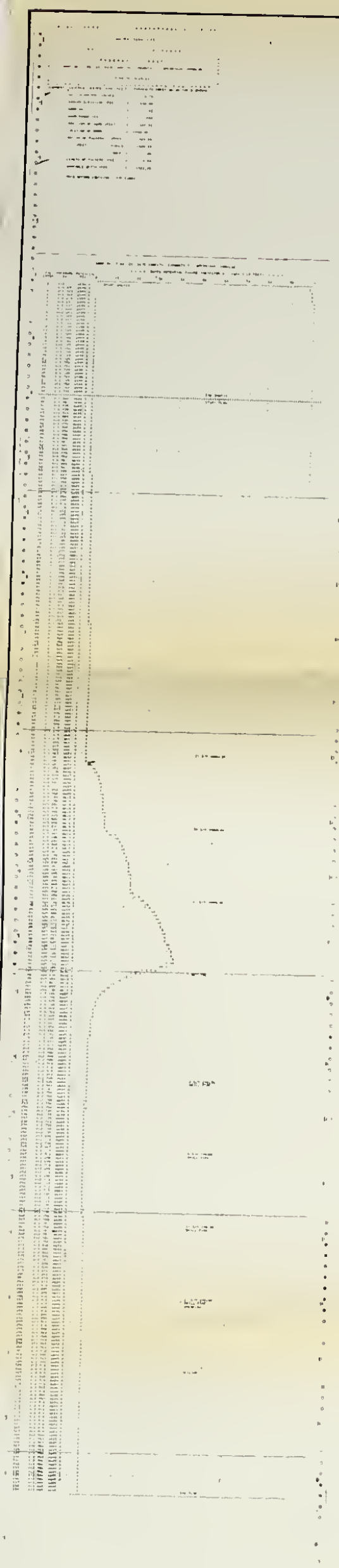


ANNULUS PRESSURE RESPONSE

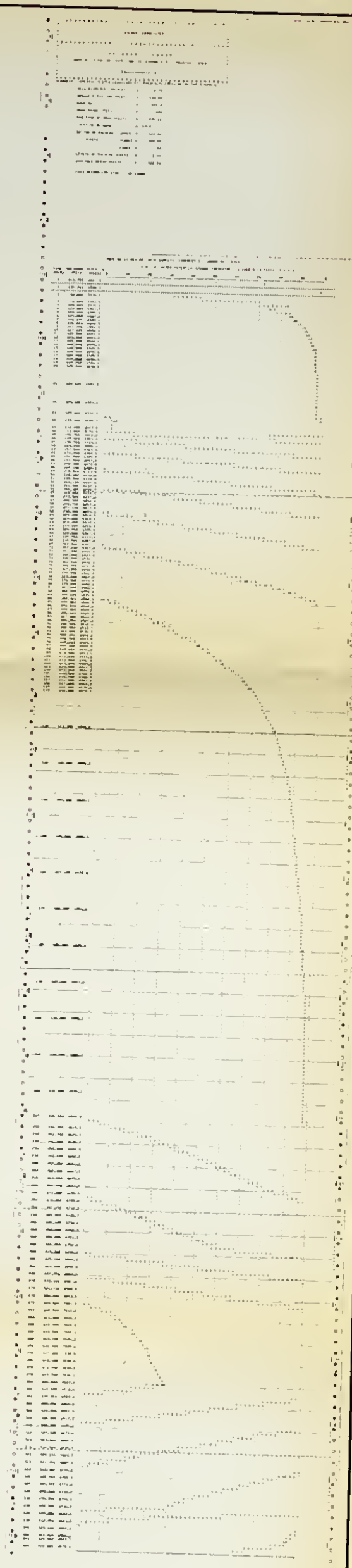
STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY



ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 Drill stem test no 22

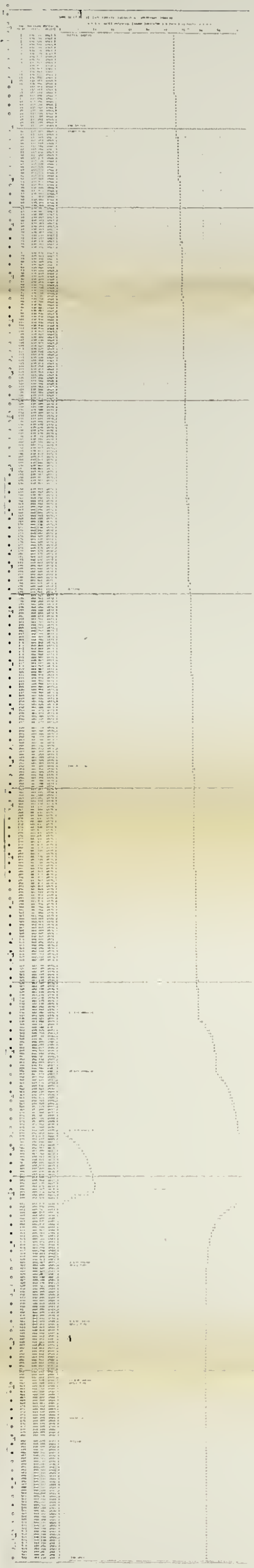
Date. Dec. 10, 1974 Interval tested 1428-1522 ft.

Pressure gauges Sperry Sun & Johnston

Formation tested Parachute Creek below the B Groove

Golder Associates

SG- 17 D.S.T.- 22



ANNULUS PRESSURE RESPONSE

STEM PRESSURE RESPONSE

II B-280

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 Drill stem test no 23

Date Dec 12, 1974 Interval tested 1514-1572 ft.

Pressure gauges Sperry Sun

Formation tested Parachute Creek below the B Groove

Golder Associates

SG- 17 D.ST- 23

ANNULUS PRESSURE RESPONSE

STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 Drill stem test no 24

Date Jan. 20, 1975 Interval tested 1561-1622 ft

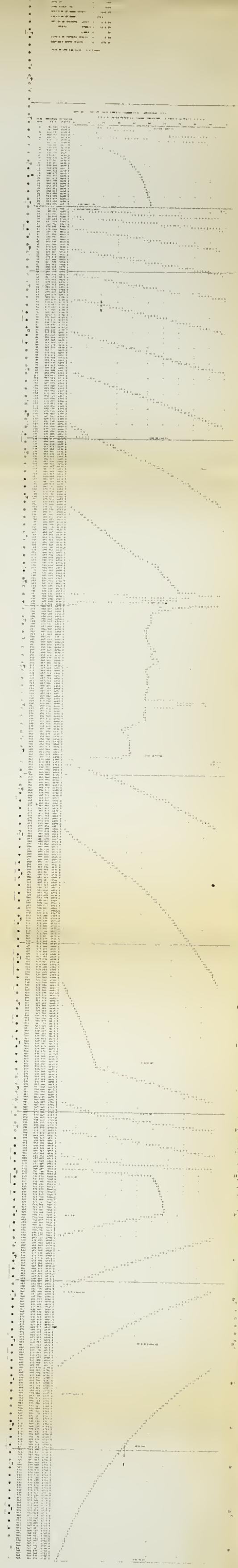
Pressure gauges Sperry Sun

Formation tested Parachute Creek below the B Groove

Golder Associates

SG - 17 DST - 24

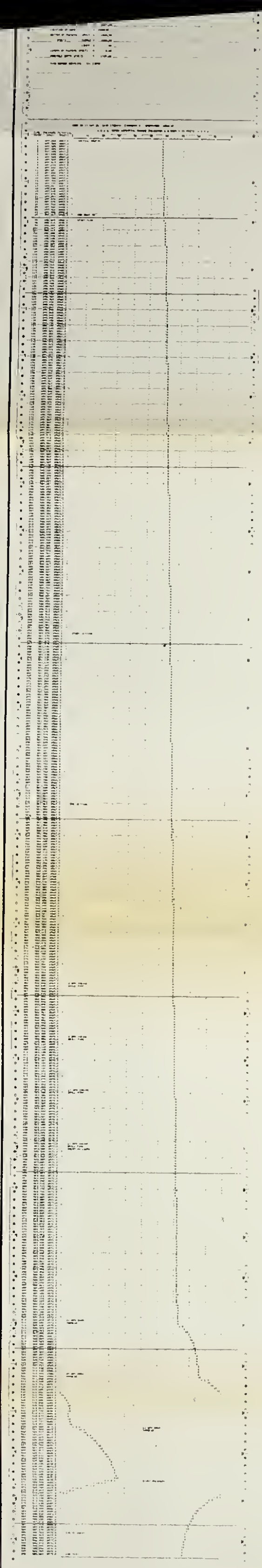
ANNULUS PRESSURE RESPONSE



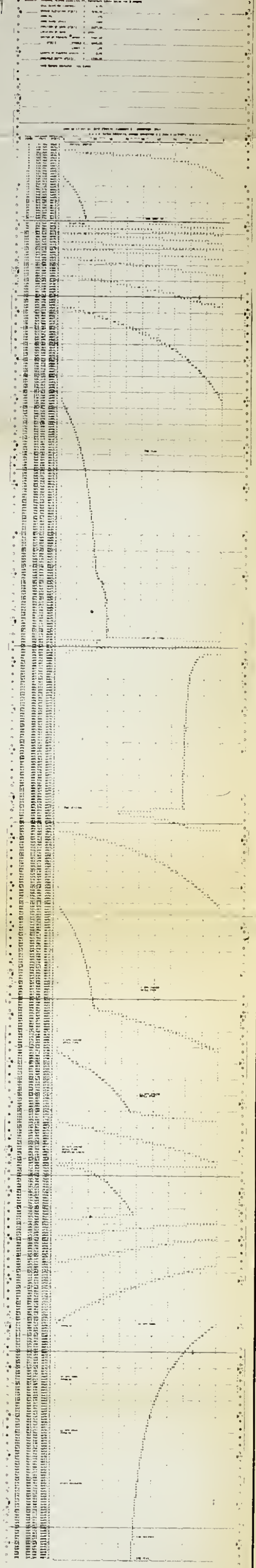
STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY



ANNULUS PRESSURE RESPONSE

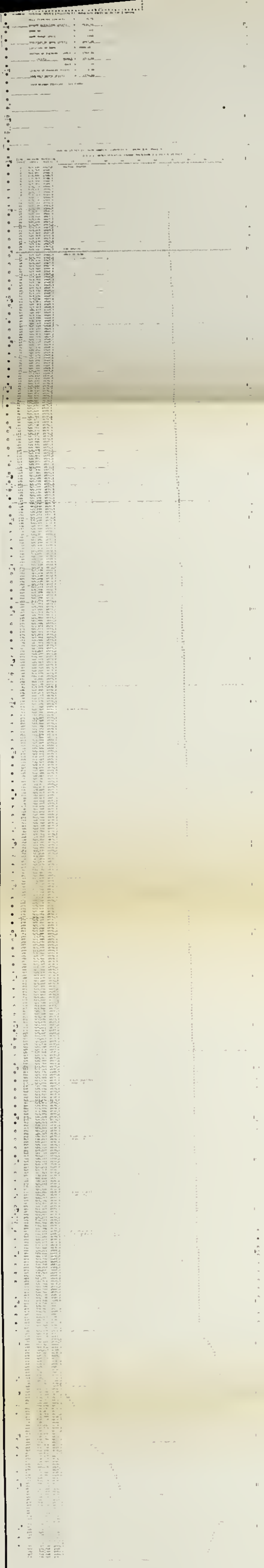


STEM PRESSURE RESPONSE

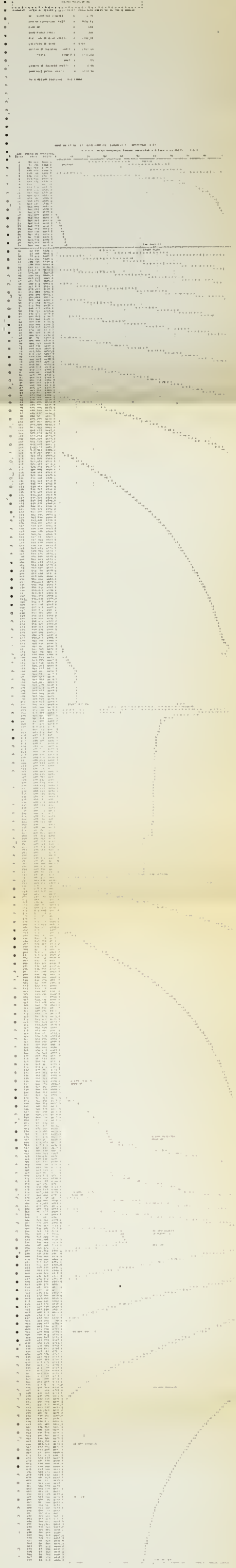
NOTES:

C-b TRACT HYDROLOGY

Borehole no	17	Drill stem test no	26
Date	Dec. 17, 1974	Interval tested	1668-1720ft.
Pressure gauges	Sperry Sun		
Formation tested	Parachute Creek below the B Groove		



ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

NOTES:

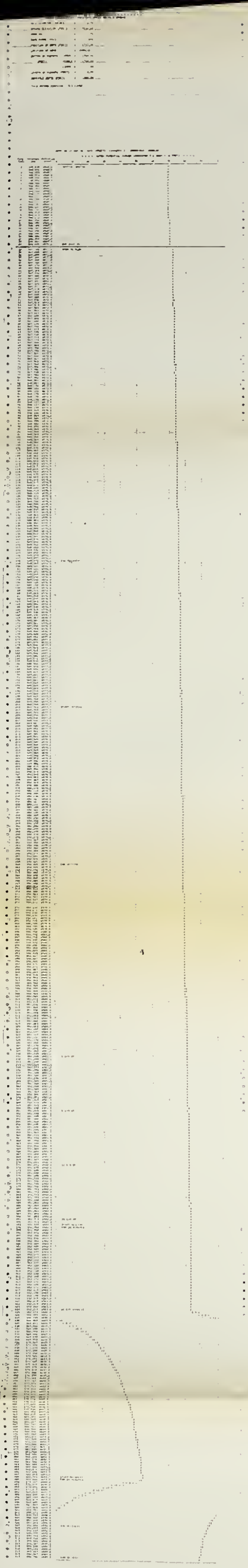
C-b TRACT HYDROLOGY

Borehole no 17 Drill stem test no 27

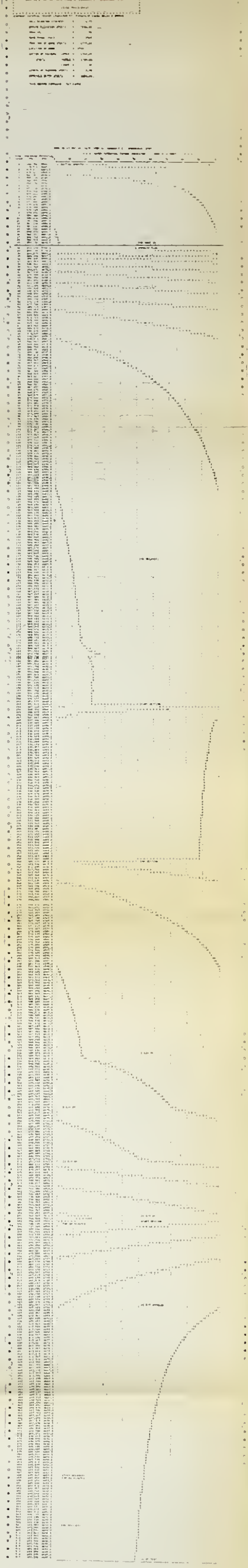
Date Dec 18, 1974 Interval tested 1711-1770 ft.

Pressure gauges: Sperry Sun

Formation tested Parachute Creek below the B Groove



ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

II B-285

NOTES:

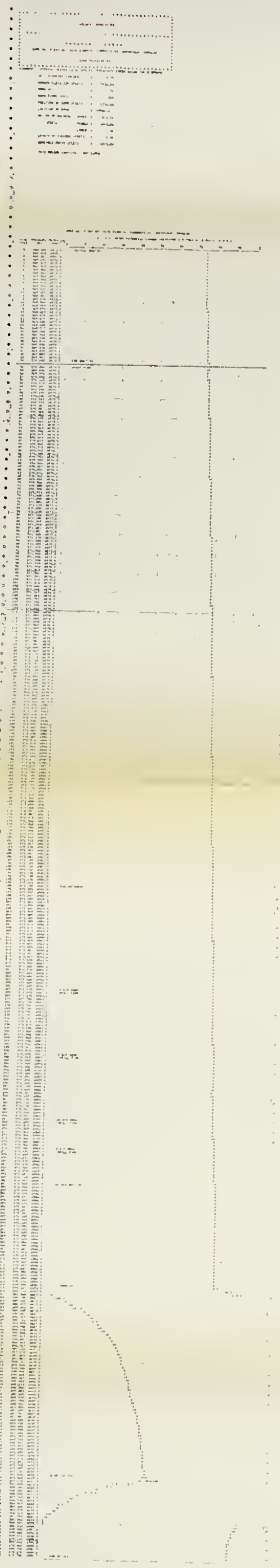
C-b TRACT HYDROLOGY

Borehole no 17 Drill stem test no 28

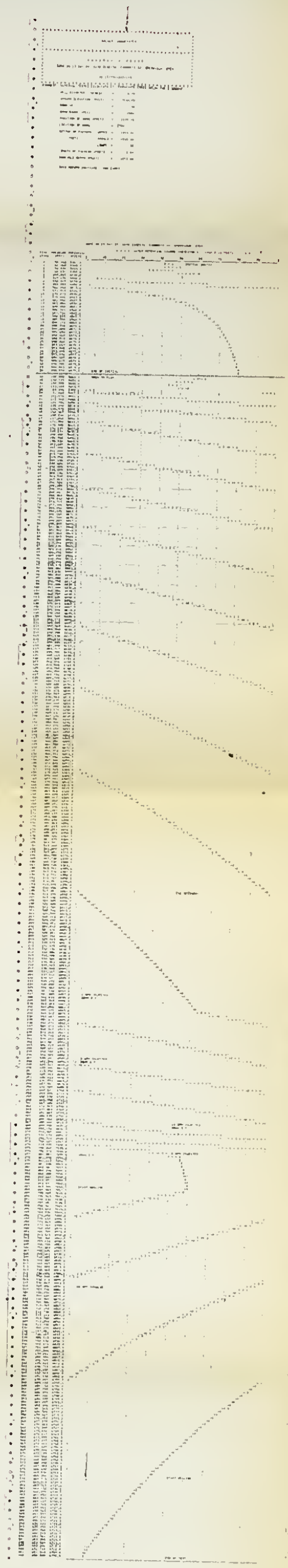
Date Dec. 19, 1974 Interval tested 1768-1820 ft.

Pressure gauges Sperry Sun

Formation tested Parachute Creek below the B Groove



ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 — Drill stem test no 29

Date: Dec. 21, 1974 — Interval tested 1818-1870 ft.

Pressure gauges: Sperry Sun

Formation tested: Parachute Creek below the B Groove

SG- . 17 — D.S.T.- 29

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P R O B E T E S T

BORE 5U 11 DBT 30 DATE 580ICHN CARODICN NR JOHNSTON SITE

02/13/79-52155:51

FLOWING INTERVAL TESTED (1000-1050 FT), PRESSURE TEST BELOW THE G GROUND

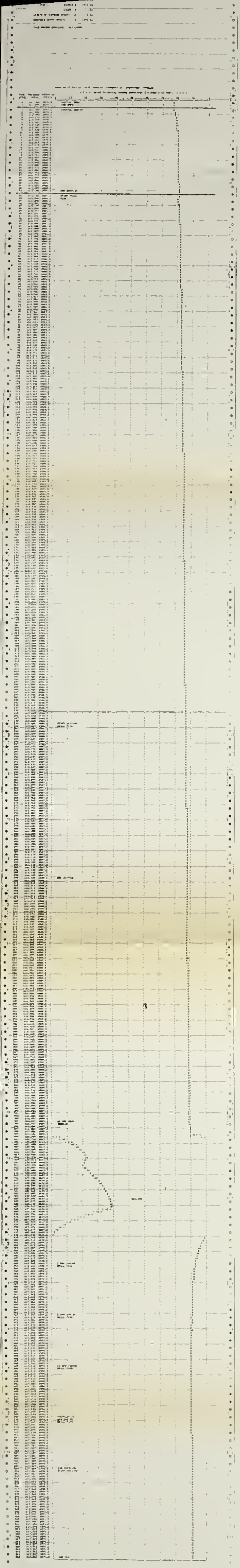
WELL DIAMETER (INCHES)	=	0.15
GROUND ELEVATION (FEET)	=	1010.00
BORE NO.	=	18105
BORE RANGE (FEET)	=	5500
POSITION OF BORE (FEET)	=	1011.00
LOCATION OF BORE	=	SITE
BOTTOM OF INTERVAL UPPER	=	1005.00
(FEET) LOWER	=	1050.00
LOWER	=	.00
LENGTH OF INTERVAL (FEET)	=	2.00
BOREHOLE DEPTH (FEET)	=	1050.00

THIS RECORD CONTAINS 88 CARDS

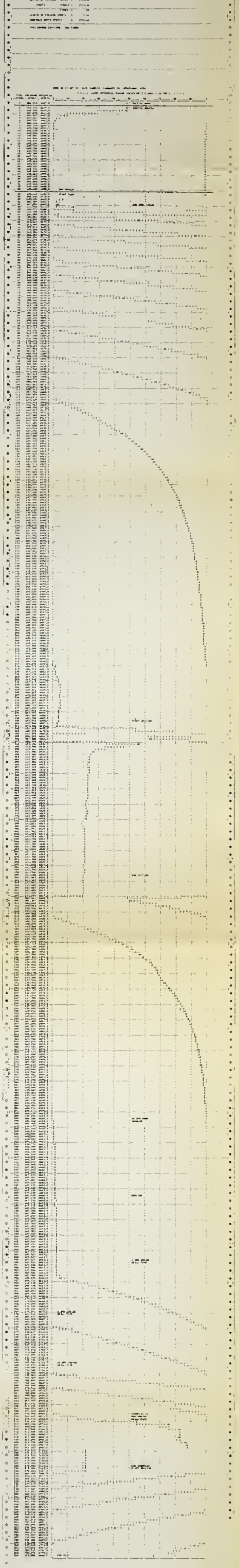
BORE 5U 17 DBT 30 DATE 580ICHN CARODSCN NR JOHNSTON SITE

* * * * WATER POTENTIAL CHANGE INDICATOR (1 INCH = 10 FEET) * * * *

TIME (MINS)	PRESSURE (PSI)	POTENTIAL (FEET)
0	101.101	5011.5
2	310.003	0110.0
4	500.000	0521.6
4	400.400	5510.5
5	105.500	0555.0
10	401.100	1550.5
10	401.100	0550.5
10	405.100	0550.0
10	405.100	0550.6
10	405.100	0550.0
50	405.100	0550.0
22	405.110	0550.0
50	405.100	0550.0
58	405.100	0550.0
50	455.100	0550.0
10	455.100	0500.0
15	400.100	0550.0
50	405.405	0050.0
51	401.500	0505.0
35	400.500	0505.0
40	400.100	0155.5
10	500.100	0151.1
40	550.100	0005.5
45	505.101	0050.0
40	500.100	0550.0
40	400.400	0505.5
45	405.150	5552.0
50	405.100	5552.0
52	401.100	0550.5
50	615.100	0550.5
55	401.101	0550.5
50	055.100	0550.5
60	405.100	0550.5
65	101.100	0550.5
60	605.700	0556.5
60	405.100	5550.0
50	405.100	0550.0
70	405.100	6550.0
75	405.100	0550.0
10	455.100	0550.0
10	455.100	4550.0
1A	405.100	0550.0
80	405.100	0550.0
82	405.150	4550.0
10	455.100	5550.0
50	605.100	0550.0
88	405.100	4555.0
90	405.100	0550.0
95	445.101	0550.0
40	455.100	0550.0
90	405.100	0550.1
95	405.100	5550.5
100	405.100	4550.0
105	405.100	0500.0
100	405.105	0550.0
106	405.103	6555.0
10	455.100	0550.0
110	405.100	0550.0
110	505.100	5550.0
110	405.100	0550.0
110	405.100	5555.0
110	505.100	0550.0
150	455.100	0550.0
125	455.100	0500.0
150	455.100	0500.1
150	405.100	0550.0
150	405.100	0550.0
130	405.100	0555.0
115	405.100	0550.1
151	405.100	0550.0
150	455.100	5550.0
115	405.100	0550.1
140	405.100	5050.0
142	405.100	0550.0
140	405.100	0510.1
140	415.100	0550.0
140	405.100	0550.0
150	415.400	0550.0
152	405.100	0550.0
150	405.100	0550.0
150	405.100	0550.0
155	405.100	0550.0
150	415.100	6550.0
165	405.105	0550.1
150	405.100	0550.0
100	405.100	0550.0
101	405.100	0550.0
100	501.000	0555.0
100	552.000	0501.0
110	405.100	0155.0
111	400.100	5510.0
115	501.500	0511.1
110	501.000	0551.1
110	401.000	0531.5
115	551.000	0510.1
100	501.000	0511.1
185	501.000	0511.1
100	591.000	0511.1
100	501.000	0511.5
100	505.000	0511.1
100	595.000	0511.5
155	595.500	0511.5
100	551.500	0511.1
100	501.050	0511.1
105	501.000	0511.1
200	501.001	5511.1
505	401.005	6511.1
500	401.000	4051.5



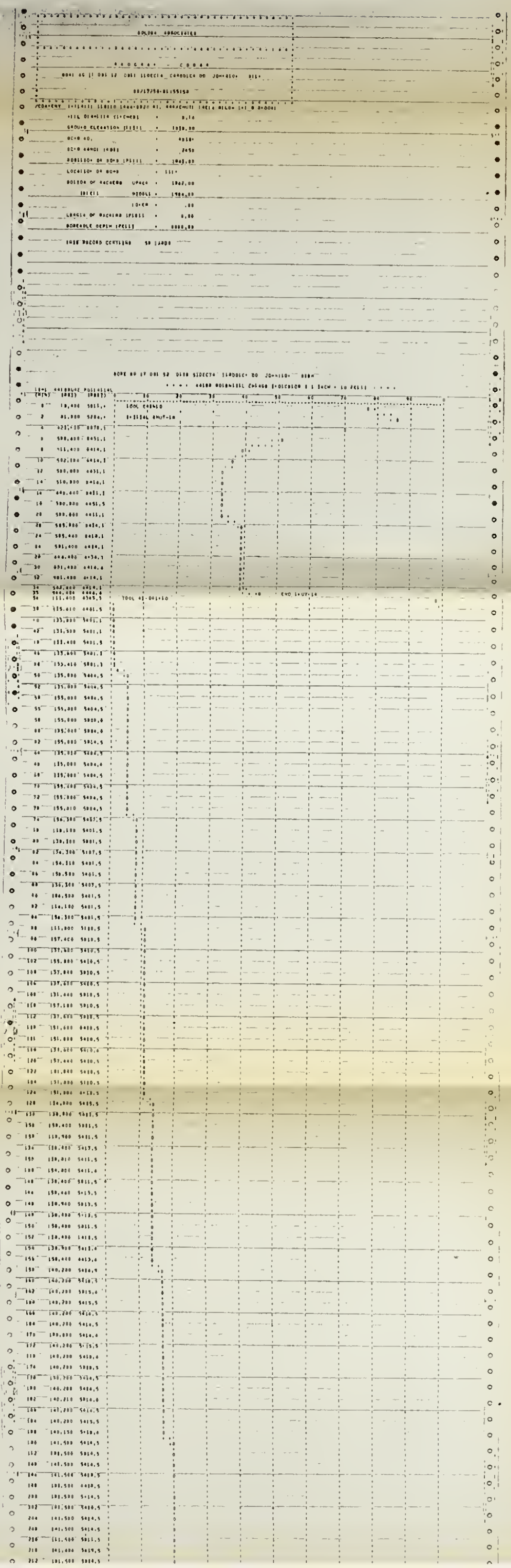
ANNULUS PRESSURE RESPONSE

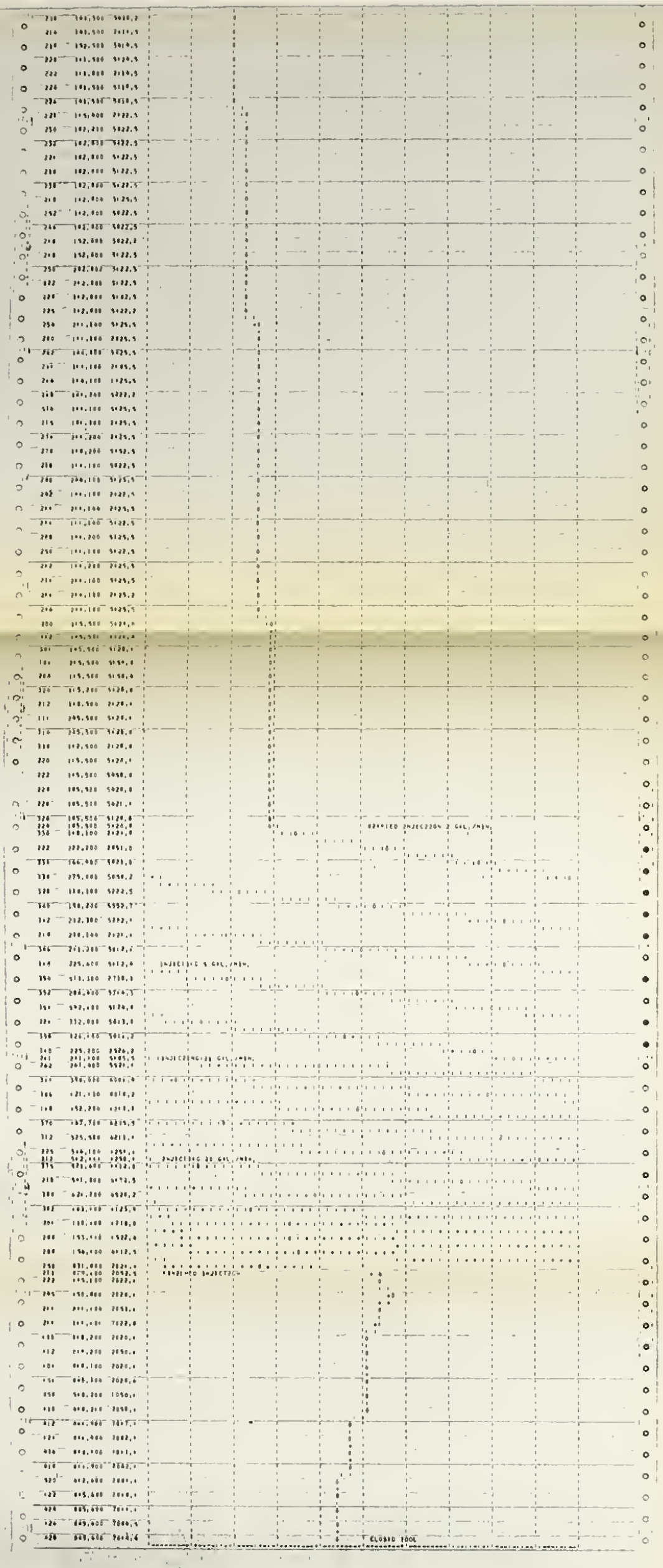


STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY





NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 — Drill stem test no. 32

Date: Dec. 31, 1974 — Interval tested: 1966-2020 ft.

Pressure gauge: Johnston (Upper)

Formation tested: Parachute Creek above the lower rich zone.

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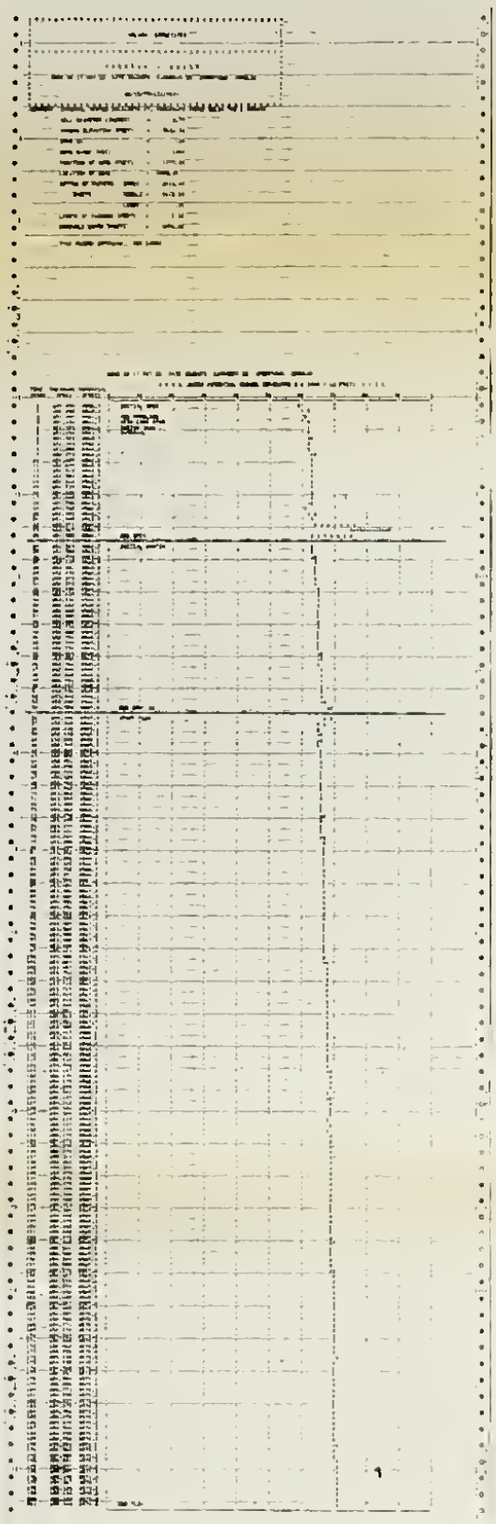
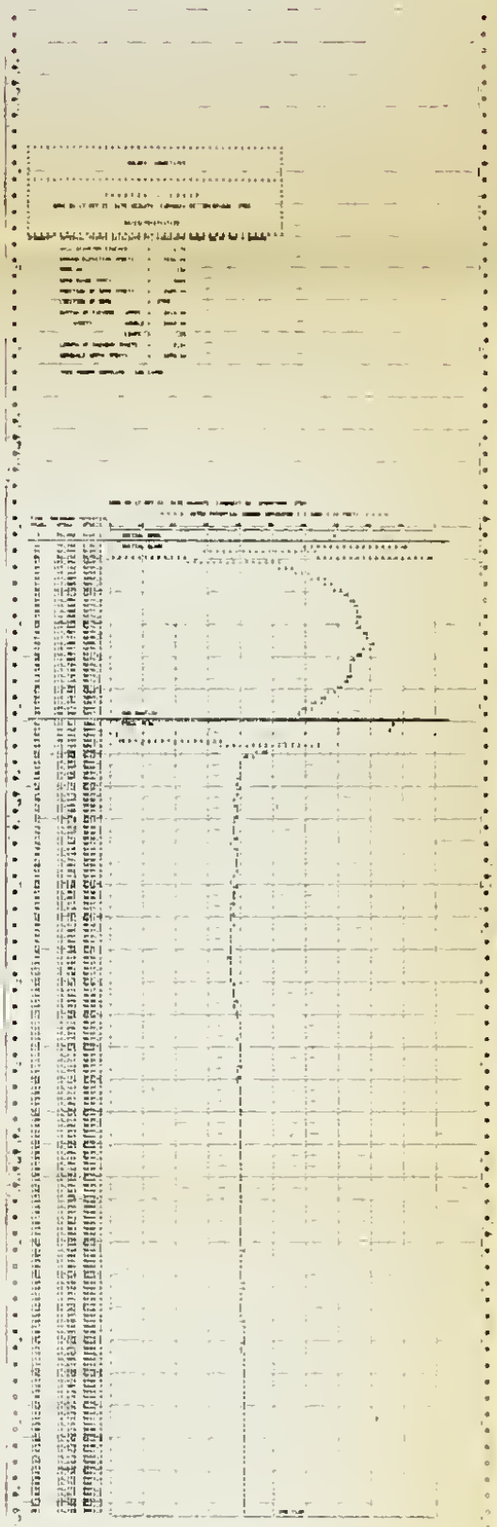
SG-17 — D.S.T. - 32



ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

II B-290

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 — Drill stem test no 33

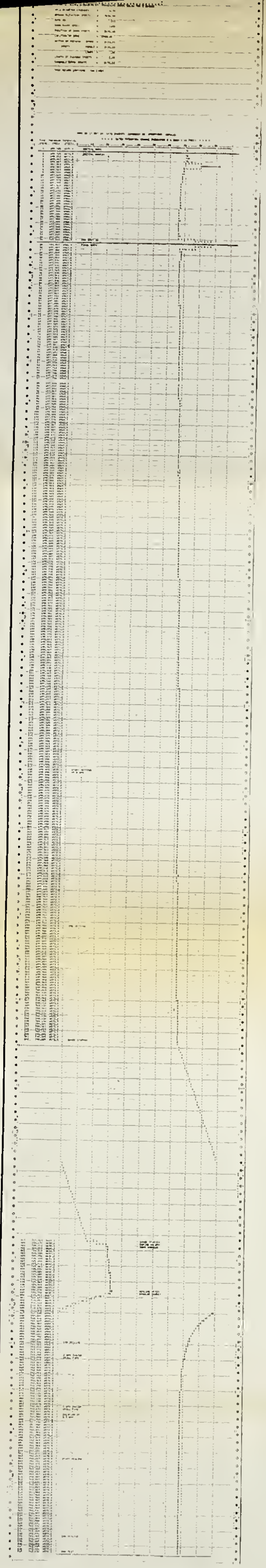
Date Jan 2, 1975 — Interval tested 2018-2070 ft

Pressure gauges Sperry Sun

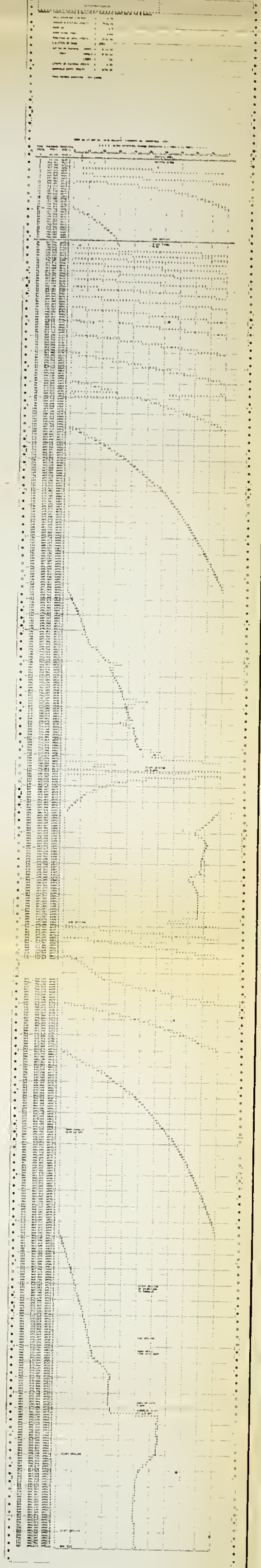
Formation tested Parachute Creek lower rich zone

Golder Associates

SG-17 — D.S.T-33



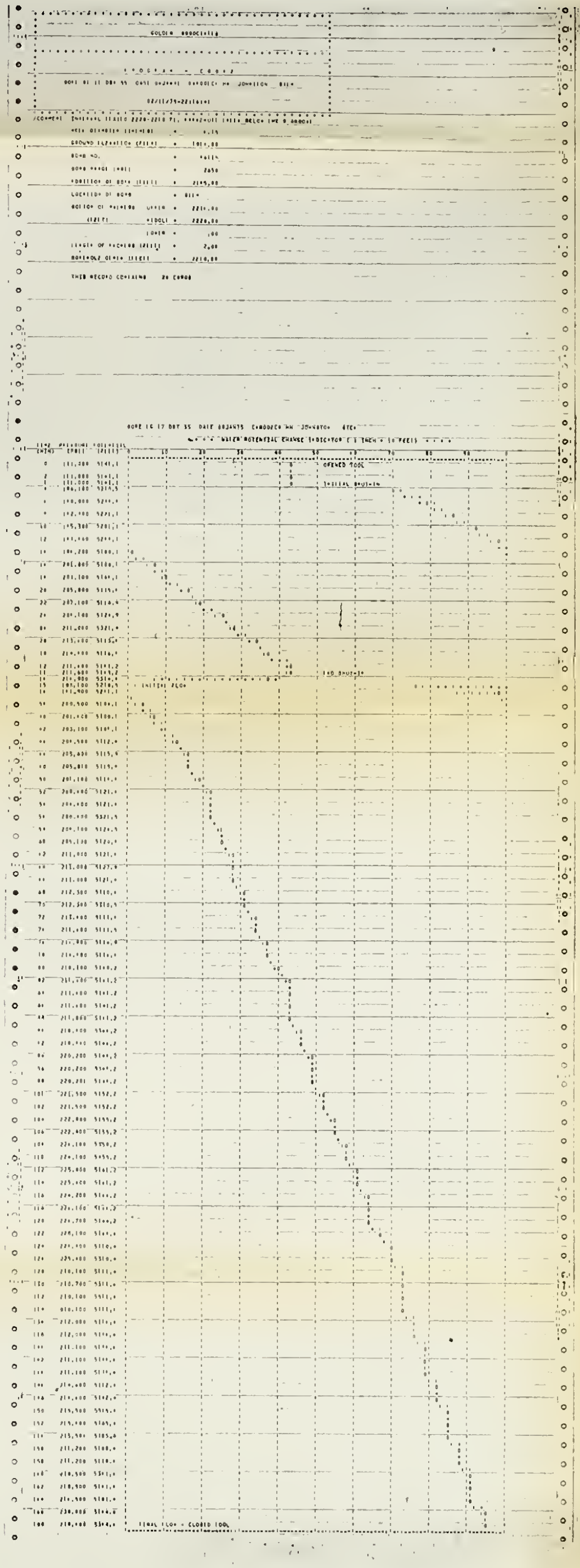
ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY	
Borehole no 17	Drill stem test no. 34



NOTES:

C-b TRACT HYDROLOGY	
Borehole no. 17	Drill stem test no. 35
Date: Jan. 6, 1975	Interval tested: 2220 - 2
Pressure gauge: Johnston (Upper)	
Formation tested: Parachute Creek below the lower rich zone	
SG - 17	D.S.T. - 35

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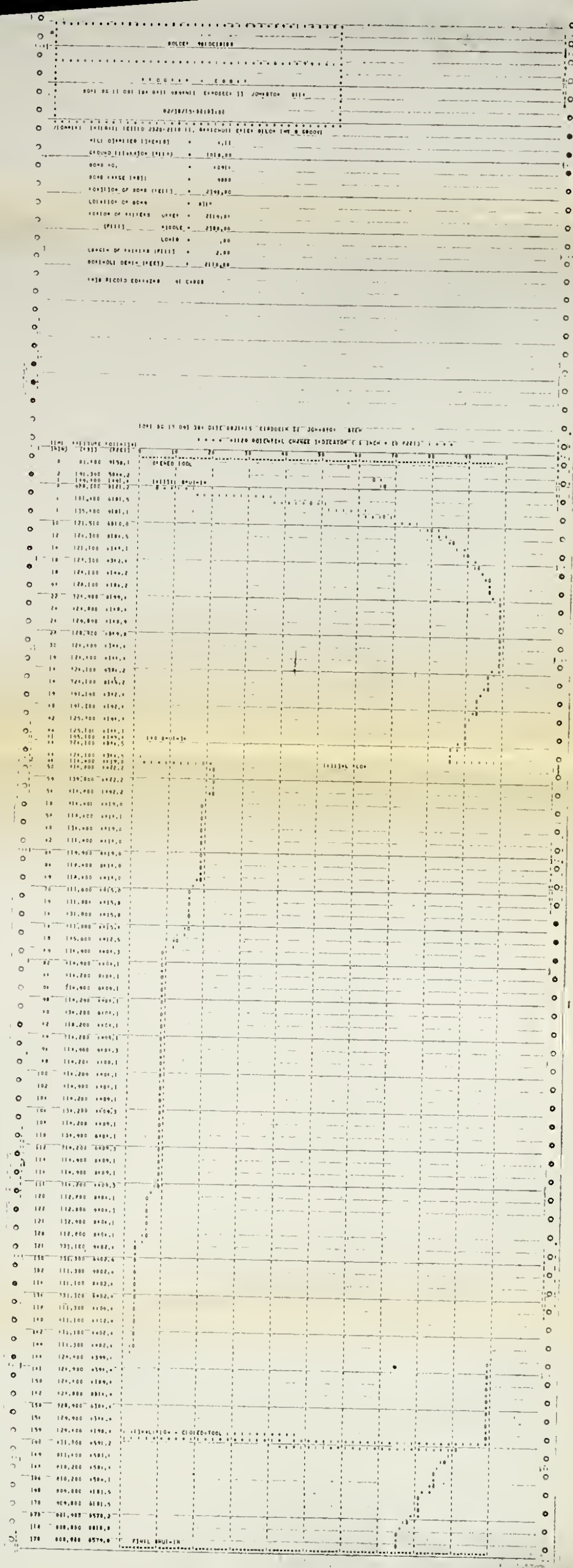


NOTES:

1. *Test aborted rerun as D.S.T. 36B*

C-b TRACT HYDROLOGY

Borehole no. *17* — Drill stem test no. *36A*

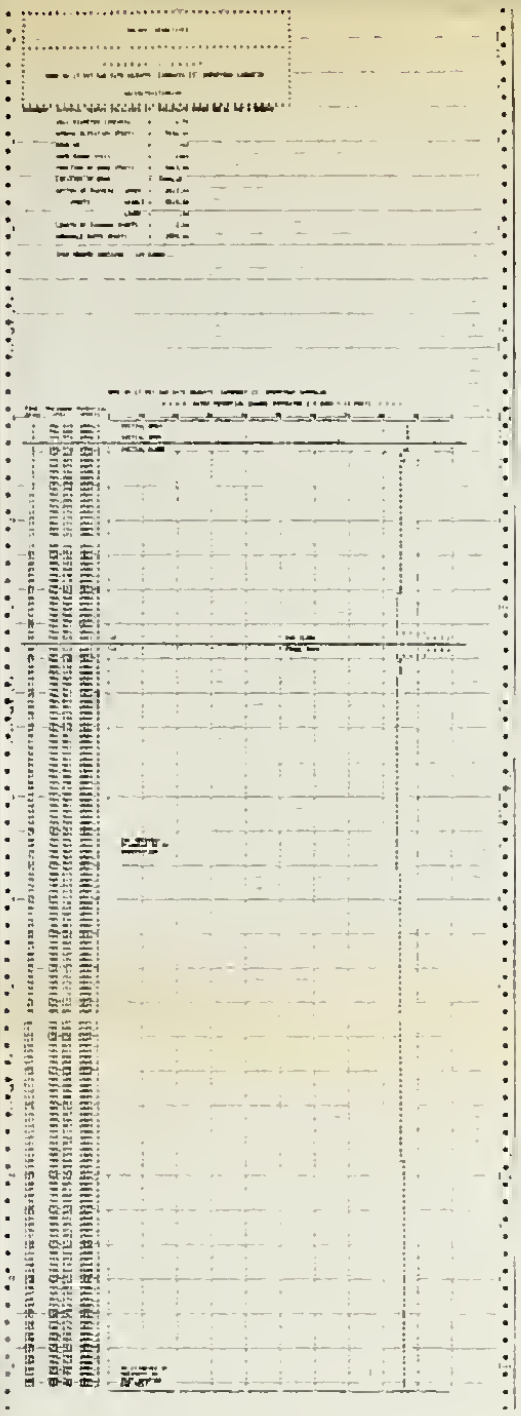
Date: *Jan. 8, 1975* — Interval tested: *2320-2370 ft.*

Pressure gauge: *Johnston (Lower)*

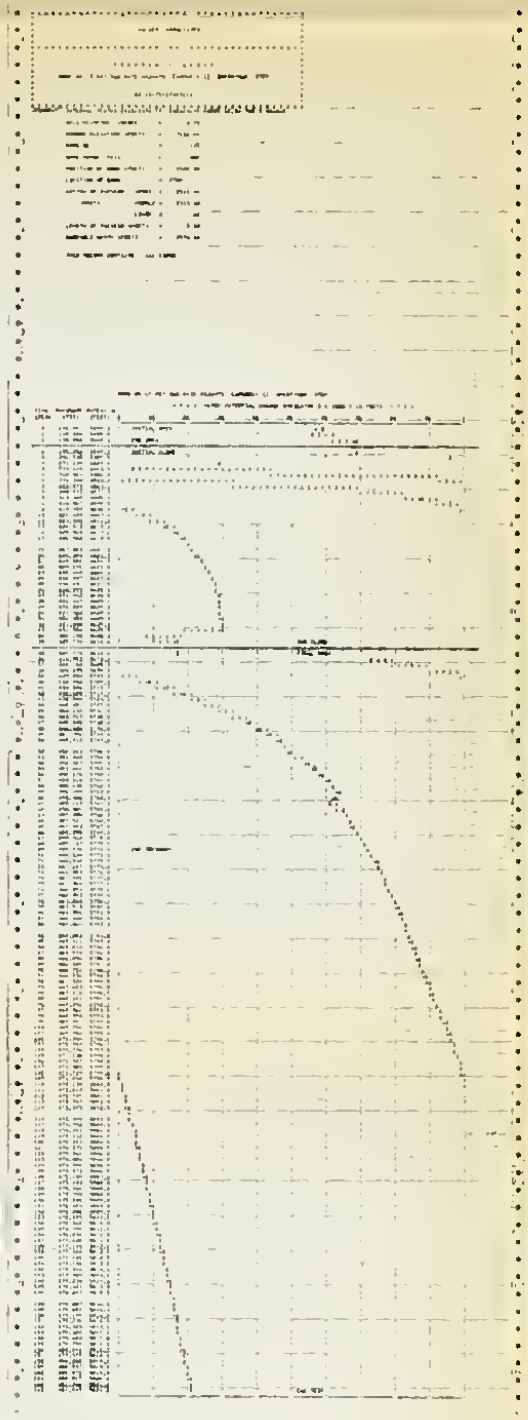
Formation tested: *Parachute Creek below the lower rich zone*

Golder Associates

SG-17 — D.S.T. -36A



ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

II B-294

NOTES:

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C-b TRACT HYDROLOGY

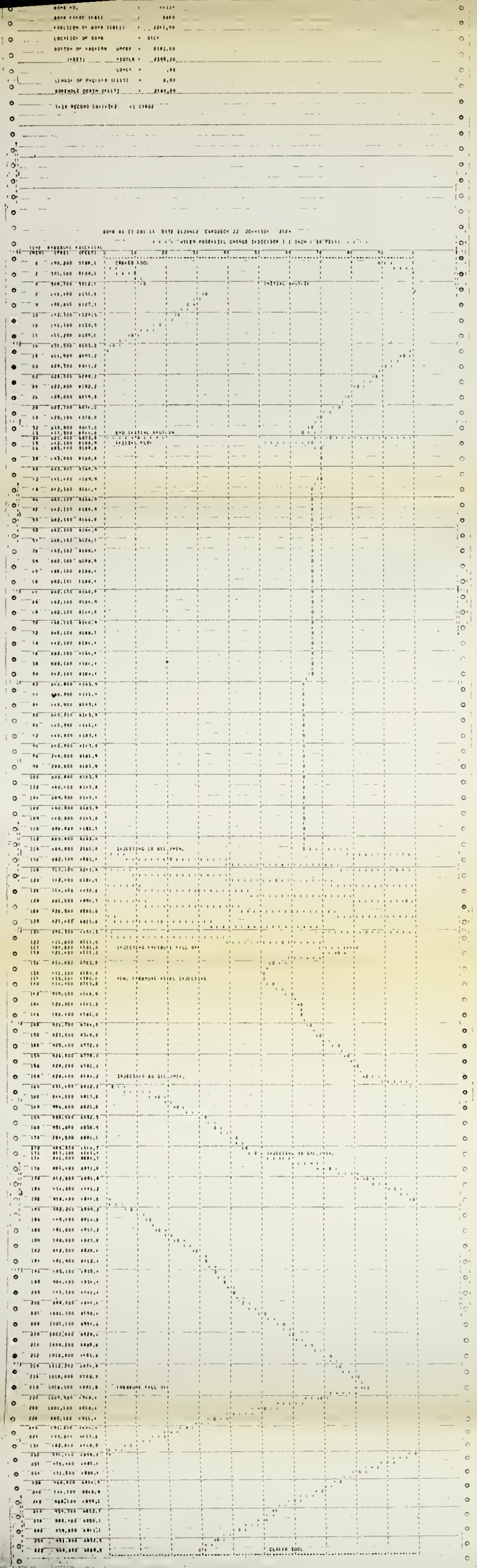
Borehole no 17 — Drill stem test no 36B

Date: Jan. 8, 1975 — Interval tested 2315-2370 ft

Pressure gauges: Sperry Sun

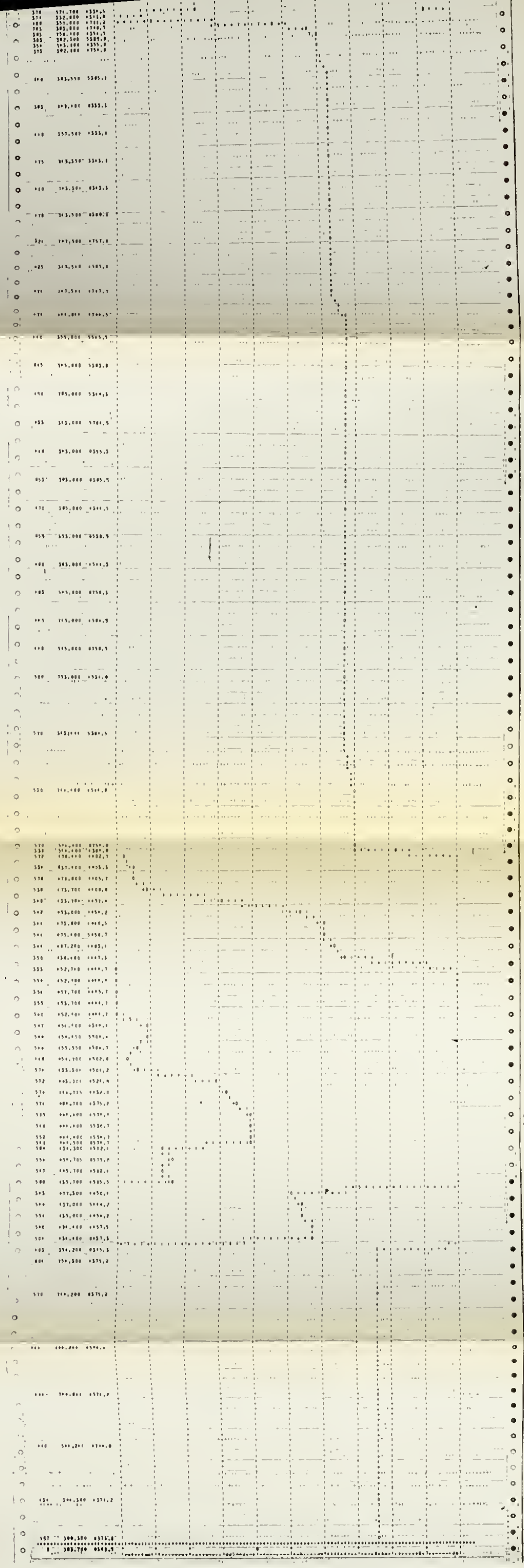
Formation tested: Parachute Creek below the lower rich zone

SG-17 — D.S.T.-36B



NOTES:

C-b TRACT HYDROLOGY



NOTES:

C-b TRACT HYDROLOGY

Borehole no. 20 Drill stem test no. 1

Date: Dec. 9, 1974 Interval tested: 896-945 ft.

Pressure gauge: Johnston (Lower)

Formation tested: Parachute Creek straddling the A Groove.

Golder Associates

SG - 20 D.S.T. - 1

GOLDER ASSOCIATES

PIEZOMETER - CODAP

BORE NO 20 DST 02 DATE 10DEC70 CARDOZO SO JOHNSTON 0130

10/02/15-10:59:20

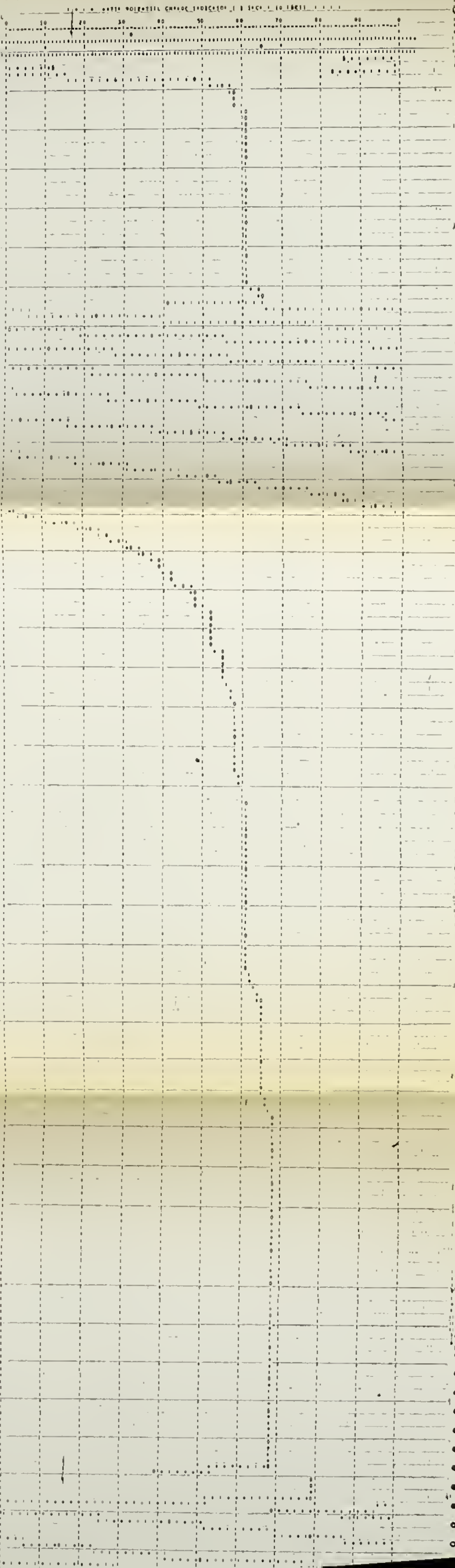
COMMENT 1 INTERVAL TESTED 0-5-00 FT, PARTIALLY CASED ABOVE THE A GROOVE

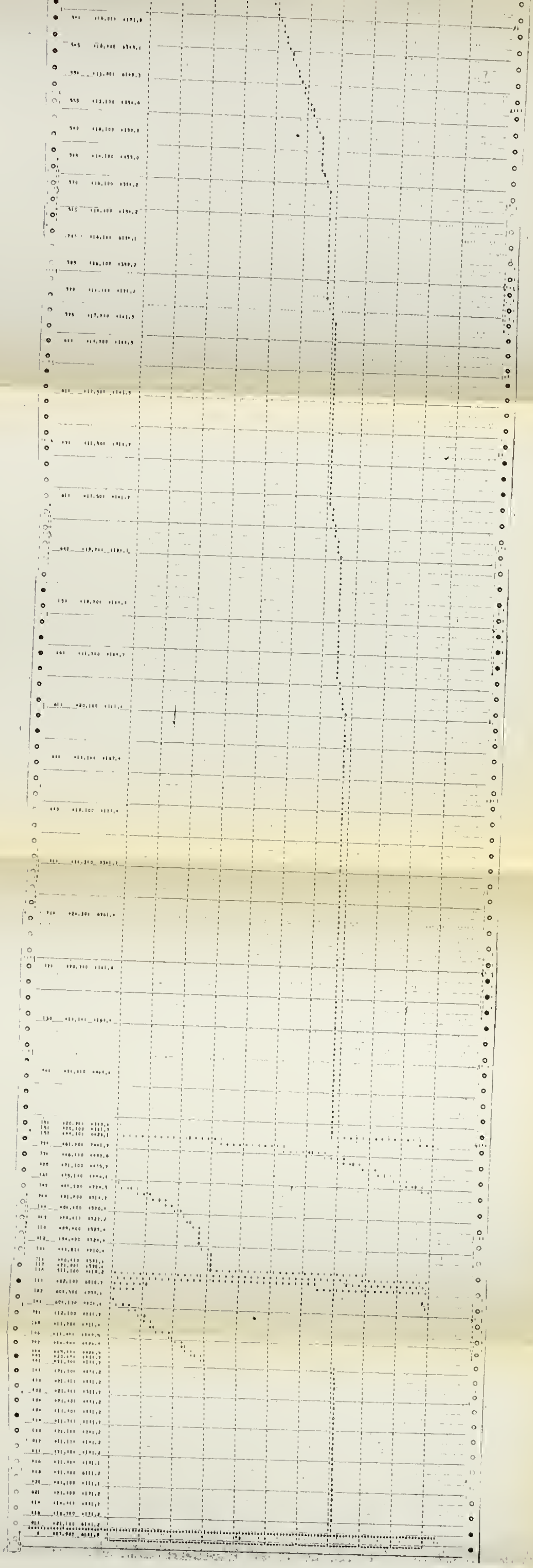
WELL DIAMETER (INCHES)	=	2.25
GROUND ELEVATION (FEET)	=	0194.00
BORE NO.	=	331
ZONE RANGE (PSI)	=	2003
POSITION OF ZONE (FEET)	=	475.00
LOCATION OF ZONE	=	010N
BOTTOM OF PACKING (FEET) UPPER	=	445.00
MIDDLE	=	506.00
LOWER	=	.00
LENGTH OF PACKERS (FEET)	=	2.00
BOREHOLE DEPTH (FEET)	=	682.00

THIS RECORD CONTAINS 85 CARDS

BORE NO 20 DST 02 DATE 10DEC70 CARDOZO SO JOHNSTON 0130

TIME (MIN)	PRESSURE (PSI)	POTENTIAL (FEET)
0	004.000	+111.2
0	+10.200	0100.1
[illegible]	[illegible]	[illegible]
20	+11.500	0101.5
25	+17.500	0321.5
30	017.200	+101.2
[illegible]	[illegible]	[illegible]
100	+10.100	0124.2
105	+12.100	+350.2
110	210.100	+150.2
115	011.500	0101.5
120	+11.500	+101.2
125	+11.900	2101.5
130	+11.300	0101.9
135	+11.500	6101.0
140	+11.500	+101.5
145	+10.000	+320.1
150	+11.900	+100.1
155	[illegible]	[illegible]
160	[illegible]	[illegible]
165	220.100	+323.0
170	+20.100	0321.0
175	020.300	0301.0
180	+20.100	+167.2
185	020.100	6107.0
190	+20.500	0101.0
195	020.300	+101.0
200	+20.100	+101.0
205	+20.100	+101.0
210	+20.100	+101.0
215	+20.100	0101.0
[illegible]	[illegible]	[illegible]





NOTES:

C-b TRACT HYDROLOGY

Borehole no. 20 — Drill stem test no. 2

Date: Dec 11, 1974 — Interval tested: 945 - 986 ft.

Pressure gauge: Johnston (Lower)

Formation tested: Parachute Creek above the mine roof

BOMB NO 21 DAY 01 DATE INDEC7A CARDDIC1 CR JOHNSTON 8TH

02/10/11-00:00:00

/COMMENT INTERVAL TIMING 1000-1010 P1, ATTACHMENT GREEN ABOVE THE 4 TROOPS

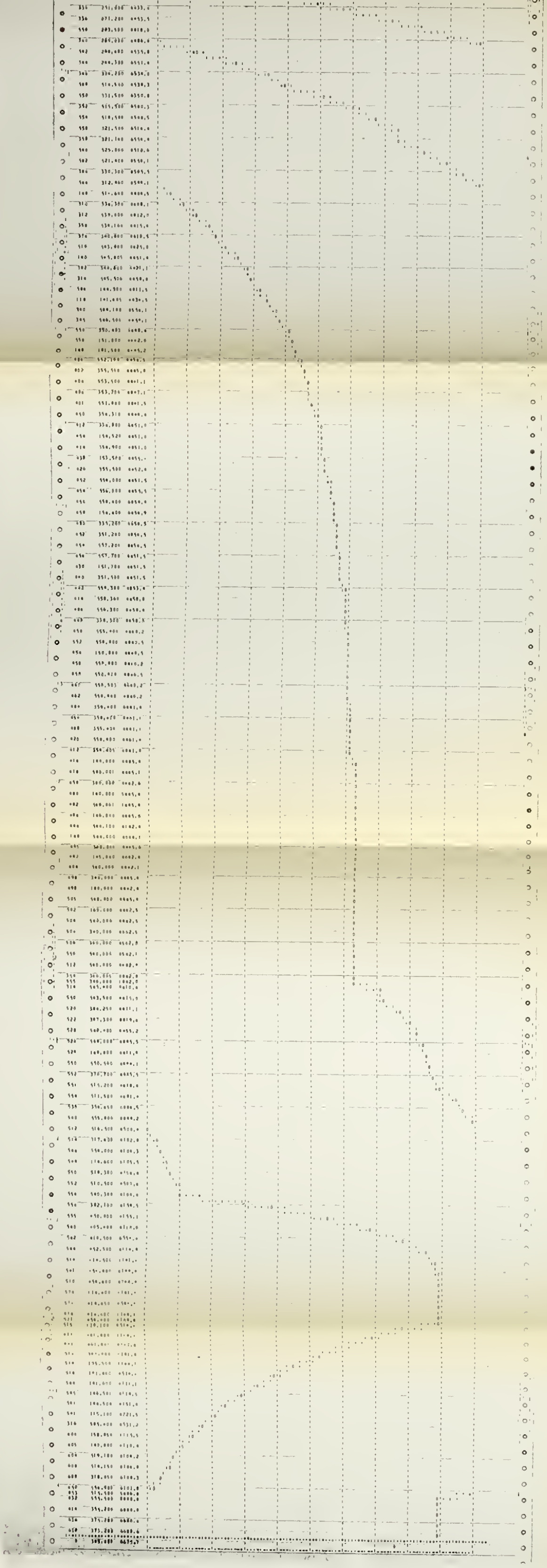
MILL DIAMETER (INCHES)	:	0.11
GROUND ELEVATION (FEET)	:	8811.00
BOMB NO.	:	J-405
BOMB RANGE (KM)	:	2800
POSITION OF BOMB (FEET)	:	414.00
[illegible]	:	[illegible]
[illegible]	:	[illegible]
[illegible]	:	[illegible]
[illegible]	:	[illegible]
LENGTH OF [illegible] (FEET)	:	1.00
[illegible]	:	[illegible]

THIS RECORD CONTAINS 12 CHAGE

BOMB NO 21 DAY 01 DATE INDEC7A CARDDIC1 CR JOHNSTON 8TH

: : : : WATER POTENTIAL CHANGE INDICATION : 1 INCH = 10 FEET : : : :

TIME (MSEC)	PRESSURE (PSI)	POTENTIAL (FEET)
0	11.000	6802.1
1	110.100	6105.1
2	225.101	1311.9
3	141.600	6121.1
4	311.000	1516.1
5	111.200	6196.1
6	311.550	6611.6
7	110.100	6806.4
8	318.000	6612.0
9	114.100	6611.6
10	181.000	6618.6
11	142.101	1622.6
12	144.200	6126.1
13	145.100	6121.8
14	384.500	6111.8
15	141.100	6616.1
16	188.700	1851.7
17	114.110	6616.1
18	148.010	6611.2
19	111.000	6661.8
20	111.100	1861.2
21	152.100	6666.5
22	188.700	6665.9
23	111.100	6661.1
24	111.000	6661.1
25	151.000	6166.5
26	311.150	6661.6
27	114.400	6611.8
28	116.100	6611.8
29	151.500	6651.6
30	115.500	6652.4
31	151.000	6613.6
32	158.000	6651.9
33	116.400	6661.6
34	356.500	1601.4
35	151.100	6616.1
36	181.200	6616.1
37	311.400	6666.1
38	141.400	6616.1
39	161.400	6161.2
40	181.000	6681.2
41	111.400	6111.6
42	161.100	6111.1
43	182.100	6111.0
44	212.411	6112.2
45	224.301	6111.2
46	245.000	6111.6
47	114.100	6616.1
48	170.400	6116.0
49	140.401	6661.2
50	141.400	6661.1
51	144.400	6111.6
52	144.100	6521.6
53	104.200	6114.8
54	101.010	6111.8
55	111.000	6511.7
56	111.200	6556.6
57	116.000	6561.2
58	118.110	6166.5
59	118.500	6511.6
60	322.200	6111.5
61	121.441	6516.5
62	121.110	6181.6
63	111.300	6181.1
64	124.000	6111.2
65	111.100	6541.8
66	111.800	6511.1
67	111.400	6660.2
68	114.100	6601.8
69	111.200	6608.1
70	111.300	6608.1
71	111.400	6110.8
72	310.100	6611.6
73	119.100	6616.8
74	180.100	6611.1
75	310.000	6610.5
80	348.000	6121.7
85	118.100	6611.3
90	151.000	6662.0
95	152.100	6661.6
100	358.300	1149.0
105	318.100	6652.6
110	156.000	6116.9
115	151.100	6611.5
120	358.100	1658.8
125	118.400	6660.1
130	358.910	6161.2
135	144.000	6666.2
140	314.400	6661.1
145	362.000	6664.2
150	382.010	6669.8
155	142.000	9684.2
160	312.000	1664.2
165	181.000	6669.1
170	182.000	1661.2
175	141.400	6618.6
180	111.400	6618.6
185	141.100	6611.5
190	185.000	6676.1
195	148.000	1616.1
200	168.000	6662.2
205	388.410	6612.2
210	168.400	6662.8
215	388.400	6662.2
220	388.400	6662.2
225	144.000	6661.1
230	168.400	6662.1
235	144.000	6661.5
240	169.000	6661.1
245	141.000	6661.5
250	144.000	6661.1
255	181.100	1718.1
260	231.000	6176.6
265	210.000	6611.1
270	181.900	6518.1
275	311.000	6181.2
280	321.000	6619.8
285	129.400	6592.8
290	388.300	6638.1
295	115.000	6609.2
300	281.400	6618.6
305	293.000	6515.1
310	292.100	1501.5
315	282.100	6110.8
320	282.500	6111.8



NOTES:

C-b TRACT HYDROLOGY

Borehole no. 21 Drill stem test no. 1

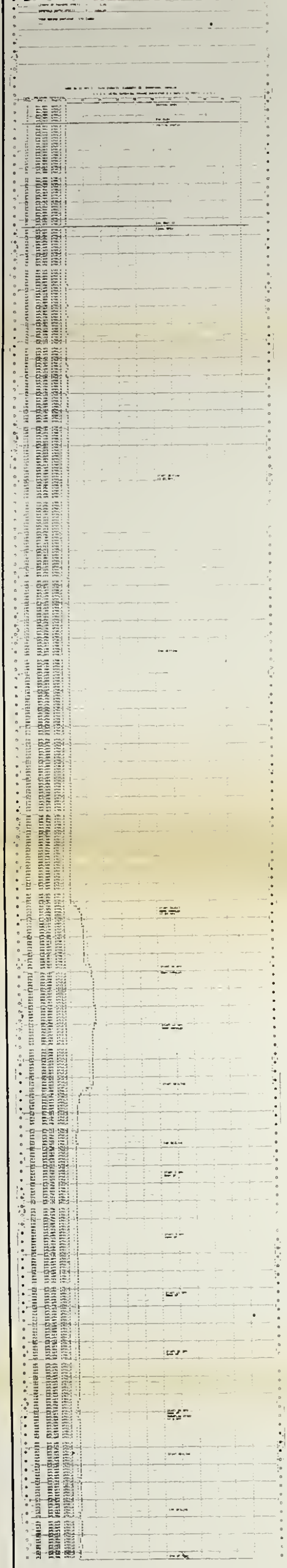
Date: Dec 19 1974 Interval tested: 1000-1036ft

Pressure gauge: Johnston (Upper)

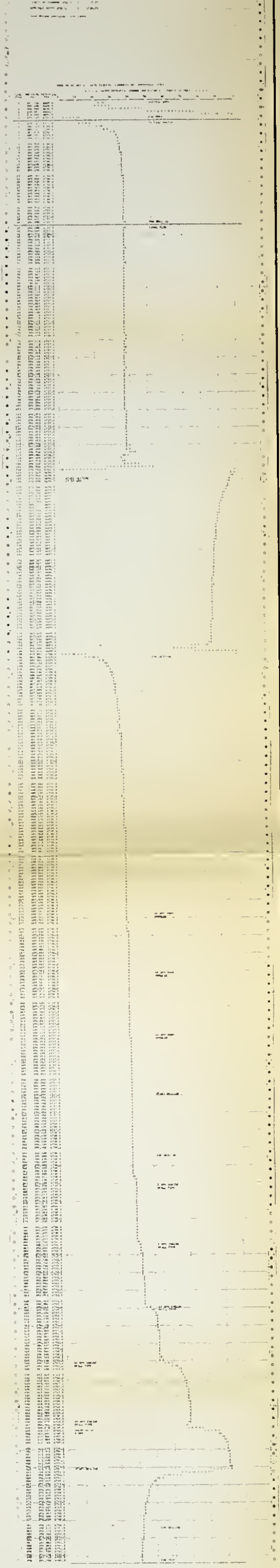
Formation tested: Parachute Creek above the mine roof

Golder Associates

SG - 21 D.S.T. - 1



ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY

Borehole no 21 Drill Stem Test no. 2

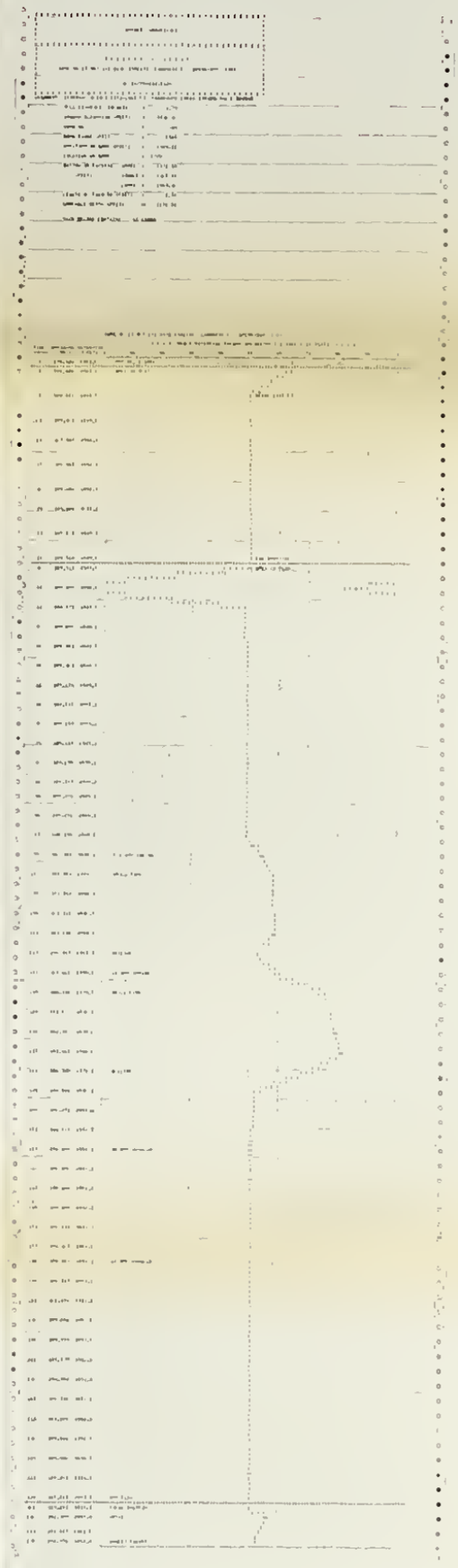
Date Dec. 21, 1974 Interval tested 950-1000 ft.

Pressure gauges Sperry Sun

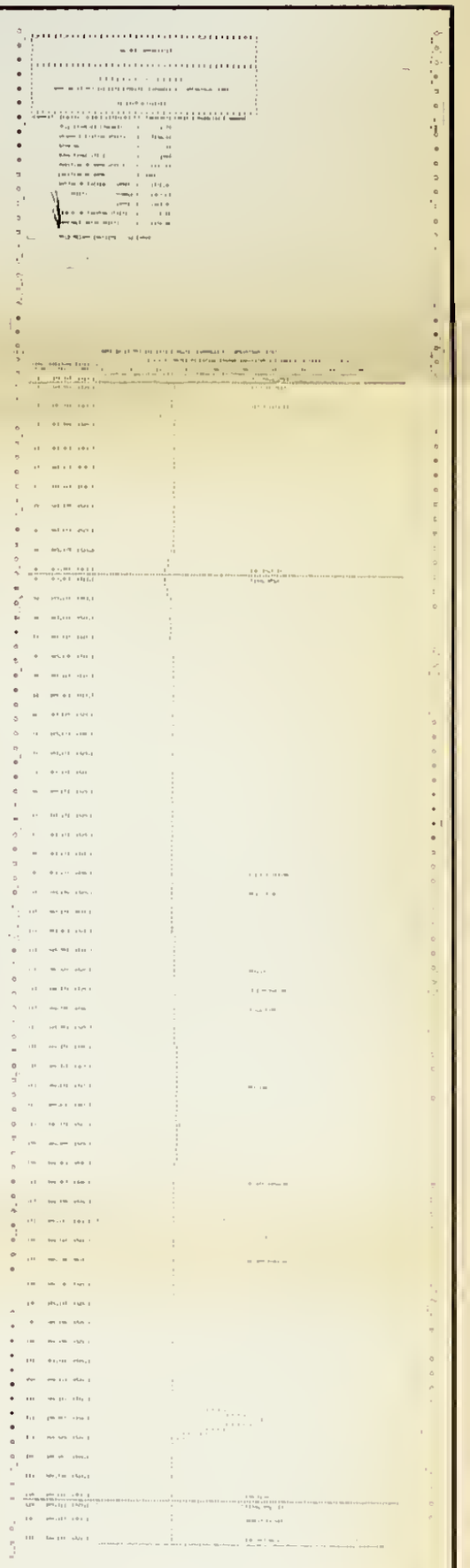
Formation tested Parachute Creek above the A Groove

Golder Associates

SG-21 D.S.T.- 2



ZONE 1 PRESSURE RESPONSE



ZONE 2 PRESSURE RESPONSE

II B-300

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 Multiple packer test no 1-1

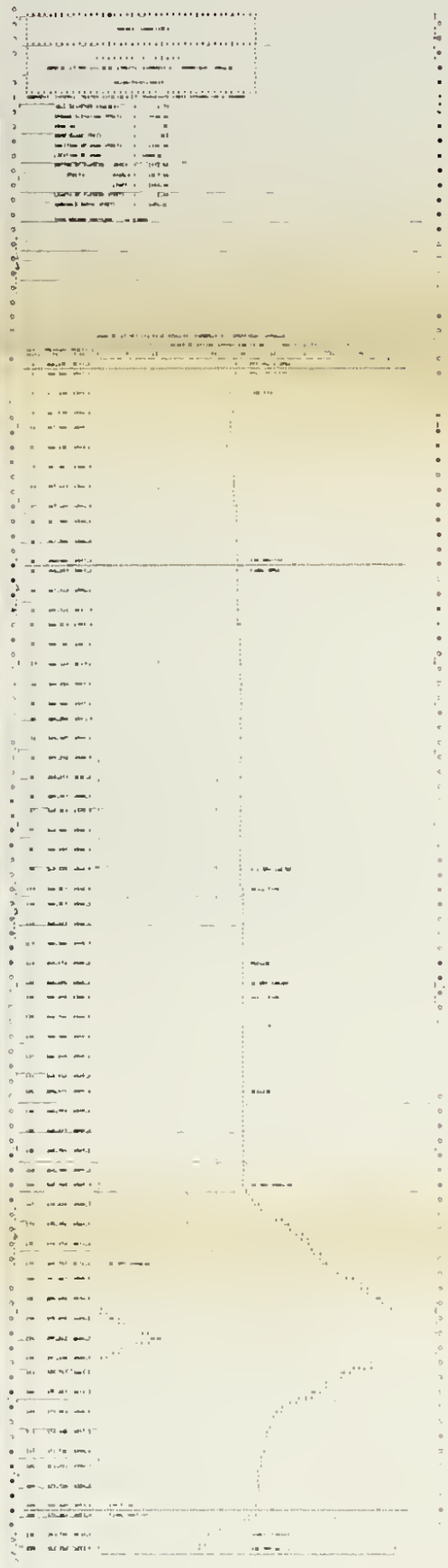
Date Dec 7, 1974 Interval tested 1372 - 1403ft

Pressure gauges Sperry Sun

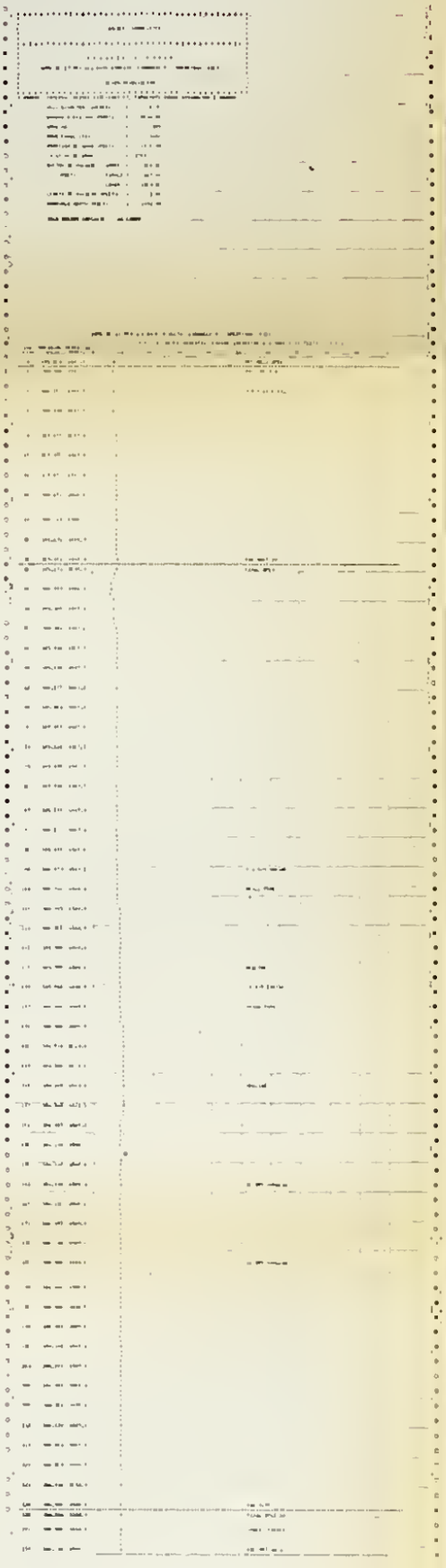
Formation tested Parachute Creek below the mine floor

Golder Associates

SG- 17 M.P.T.- 1-1



ANNULUS PRESSURE RESPONSE



"BOTTOM OF HOLE" PRESSURE RESPONSE

11 6-201

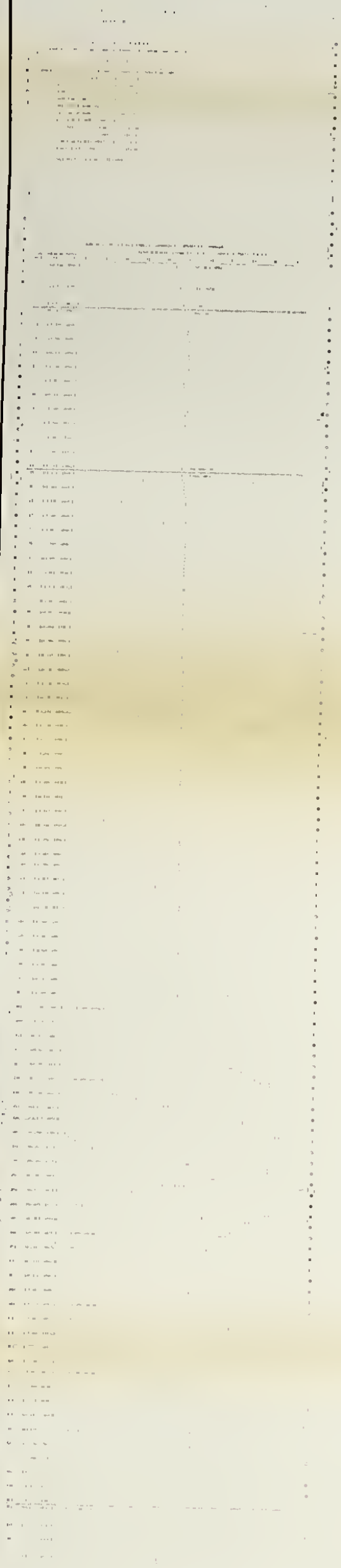
NOTES:

C-b TRACT HYDROLOGY

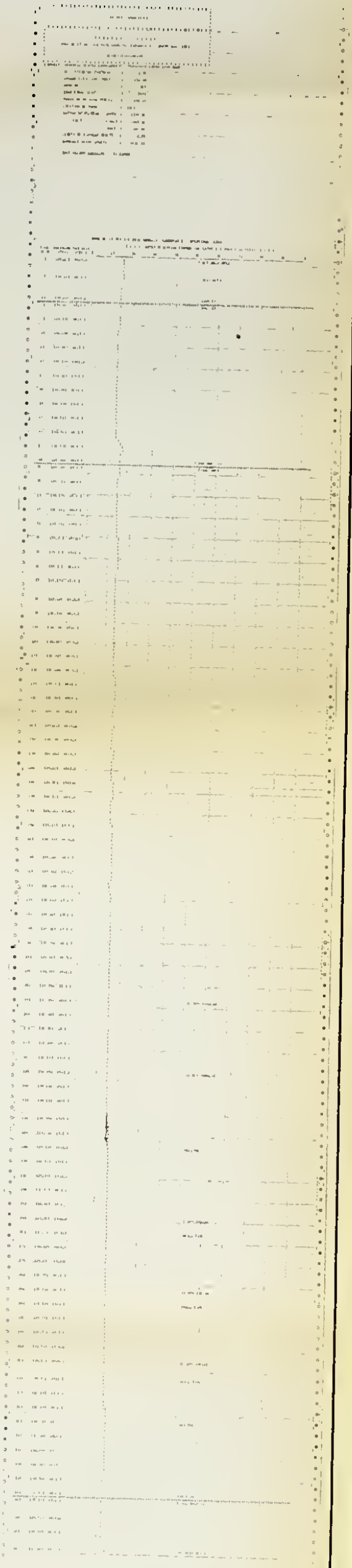
Borehole no 17	Multiple packer test no 1-1
Date Dec. 7, 1974	Interval tested 1372-1403 ft
Pressure gauges Sperry Sun	
Formation tested Parachute Creek below the mine floor	

Golder Associates

SG - 17 M.P.T. - 1-1



ANNULUS PRESSURE RESPONSE



"BOTTOM OF HOLE" PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 — Multiple packer test no 1-2

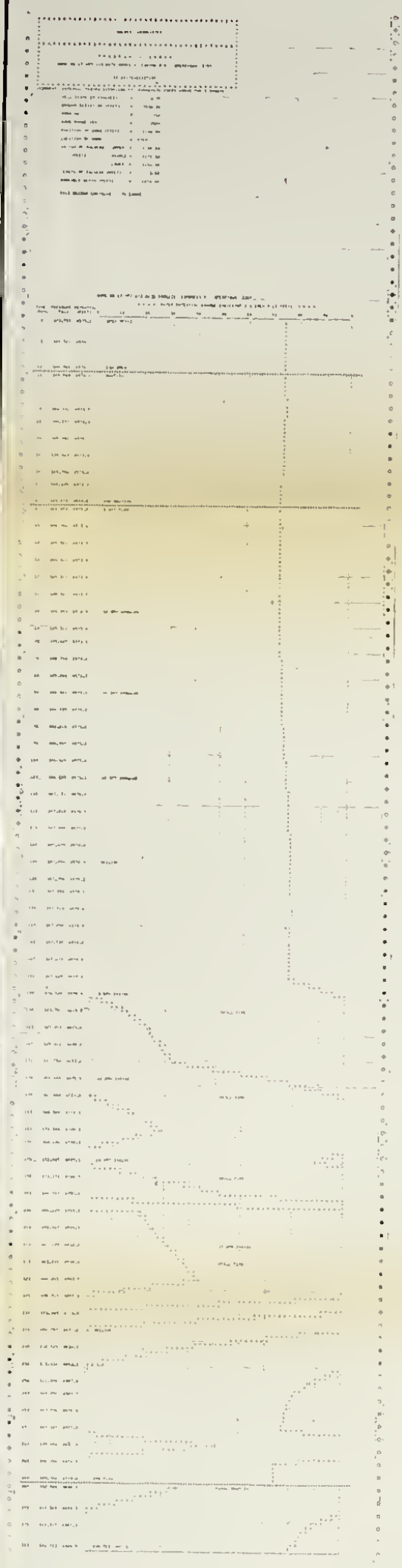
Date Dec. 8, 1974 — Interval tested 1249-1280 ft.

Pressure gauges Sperry Sun

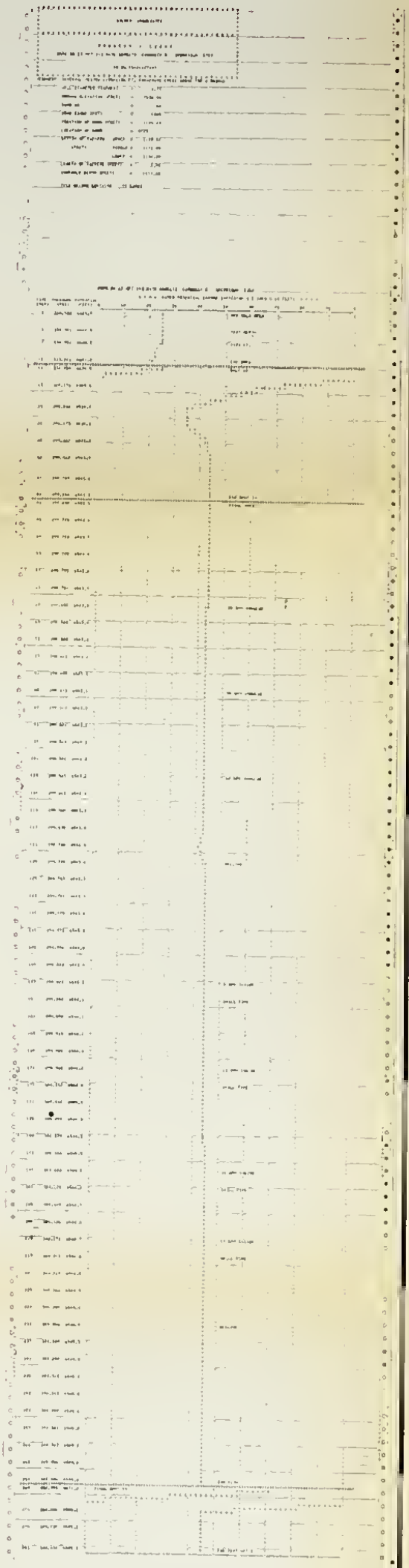
Formation tested Parachute Creek mine roof

Golder Associates

SG - 17 — MPT - 1-2



ZONE 1 PRESSURE RESPONSE



ZONE 2 PRESSURE RESPONSE

II B-304

NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 — Multiple packer test no 1-3

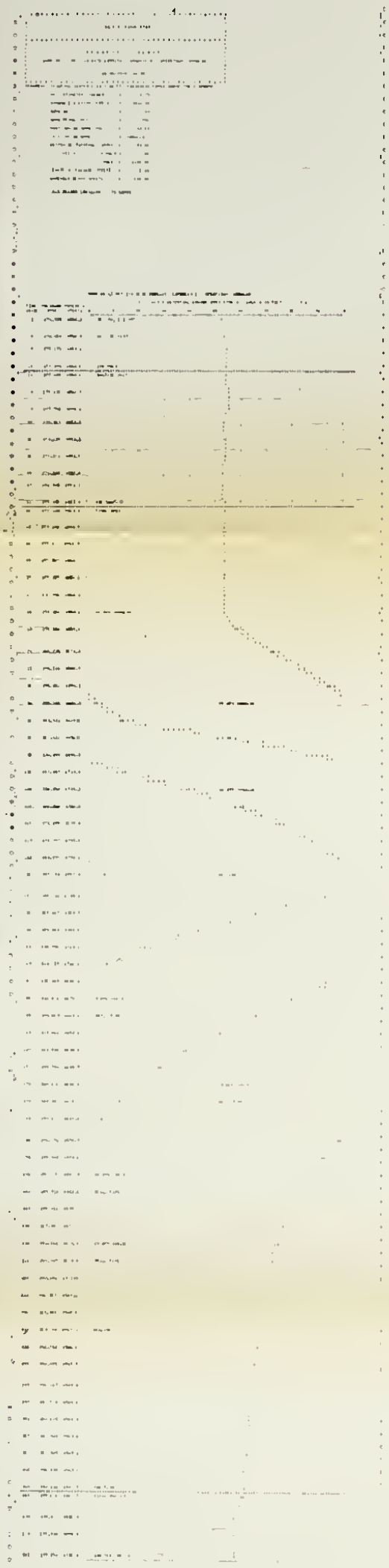
Date. Dec. 8, 1974 — Interval tested. 1155-1186 ft

Pressure gauges Sperry Sun

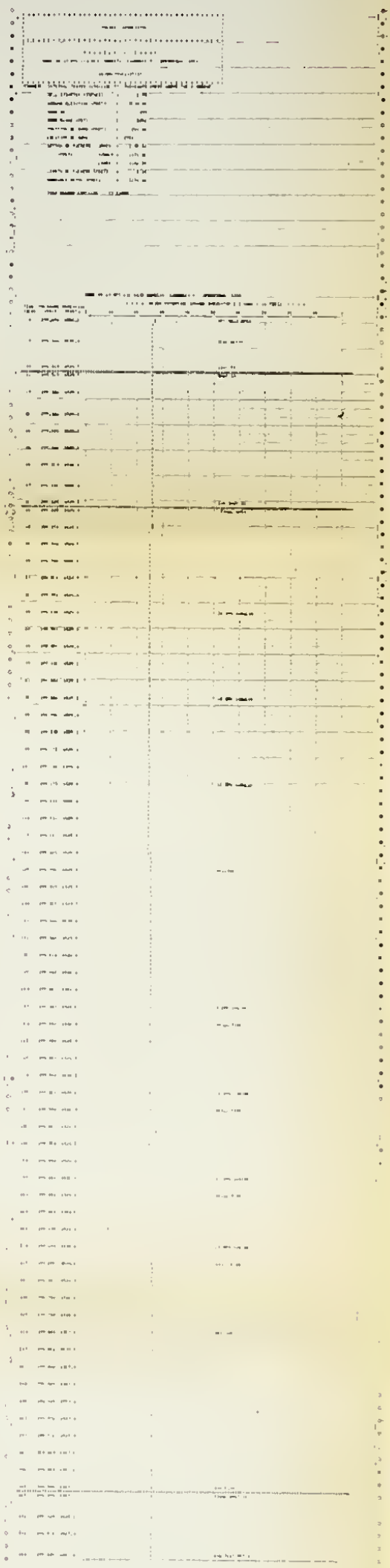
Formation tested. Parachute Creek above the A Groove

SG- 17 — M.P.T.- 1-3

Golder Associates



ANNULUS PRESSURE RESPONSE



"BOTTOM OF HOLE" PRESSURE RESPONSE

II B-305

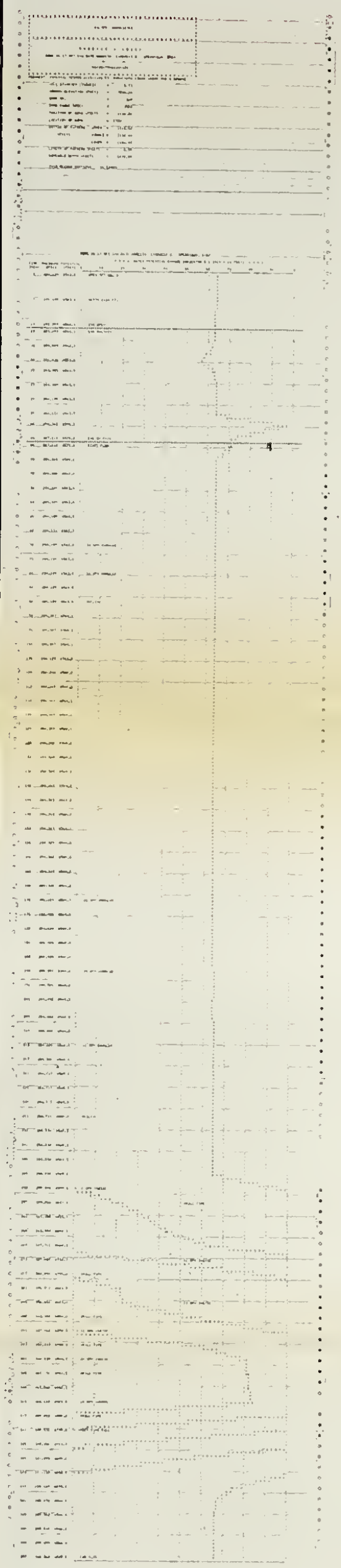
NOTES:

C-b TRACT HYDROLOGY

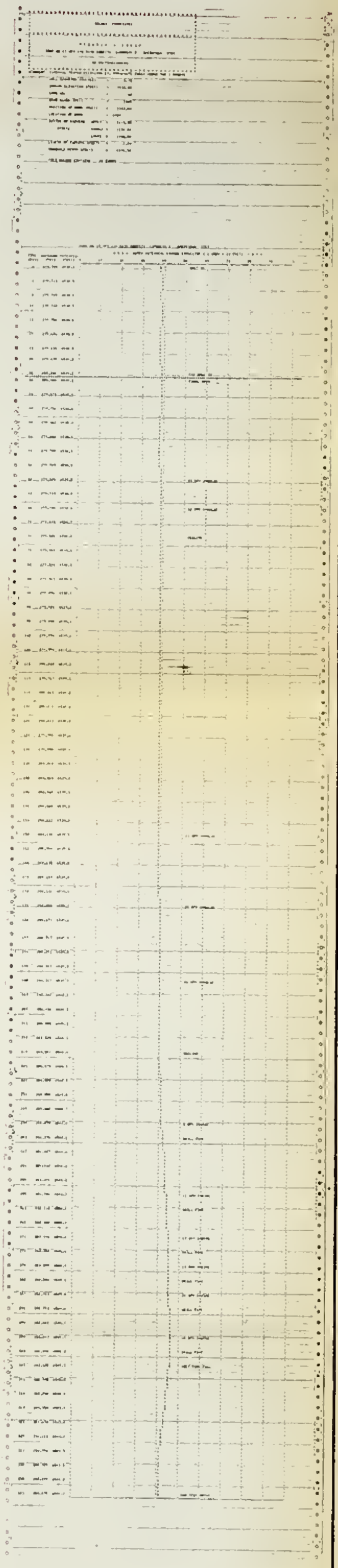
Borehole no 17	Multiple packer test no 1-3
Date Dec. 8, 1974	Interval tested 1155-1186 ft.
Pressure gauges	Sperry Sun
Formation tested	Parachute Creek above the A Groove

Golder Associates

SG-17 M.P.T.-1-3



ZONE 1 PRESSURE RESPONSE



ZONE 2 PRESSURE RESPONSE

II B-306

NOTES:

C-b TRACT HYDROLOGY

Borehole no *17* Multiple packer test no *1-4*

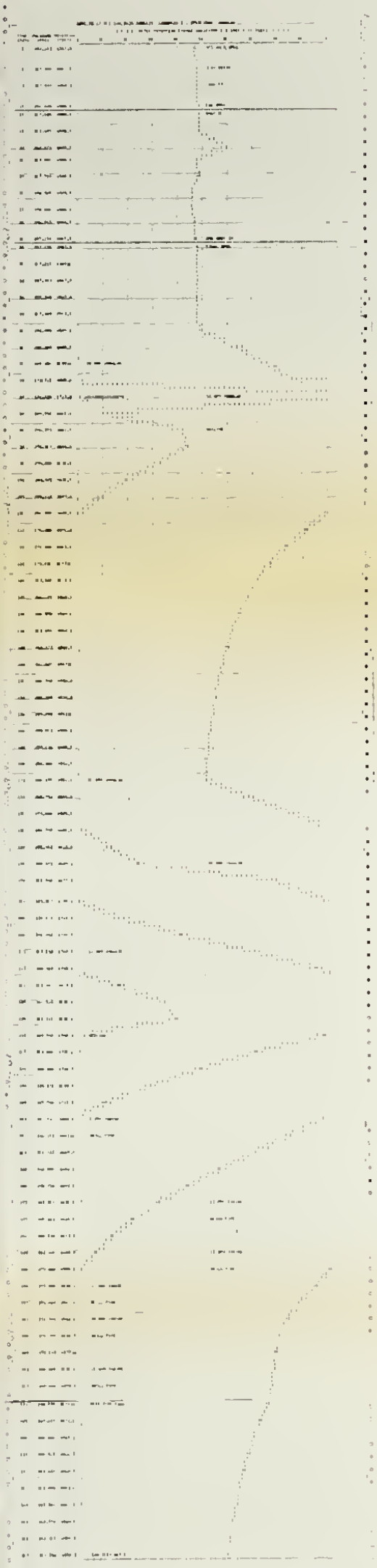
Date: *Dec 8, 1974* Interval tested *1115-1146 ft.*

Pressure gauges: *Sperry Sun*

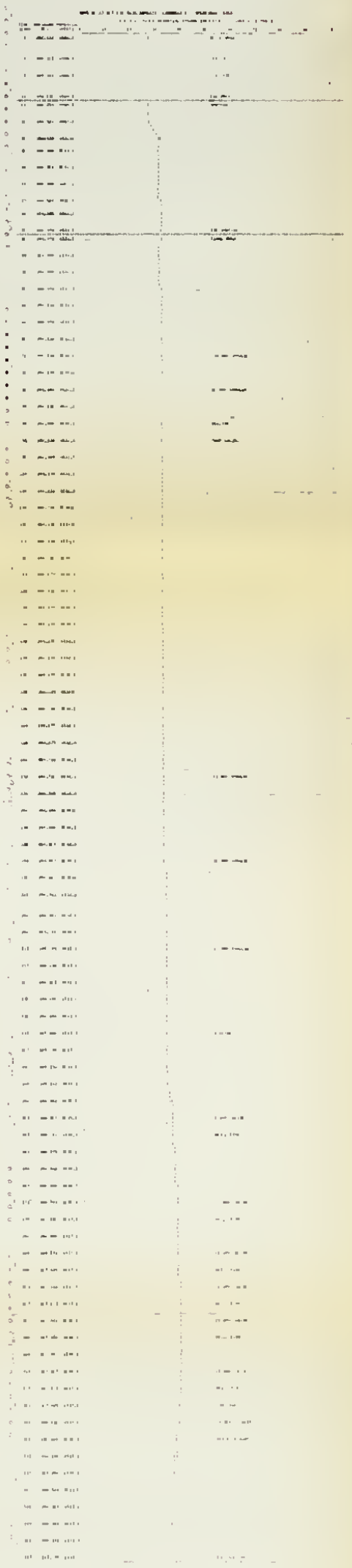
Formation tested *Parachute Creek above the A Groove*

Golder Associates

SG- *17* M.P.T.- *1-4*



ANNULUS PRESSURE RESPONSE



"BOTTOM OF HOLE" PRESSURE RESPONSE

II B-307

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 — Multiple packer test no 1-4

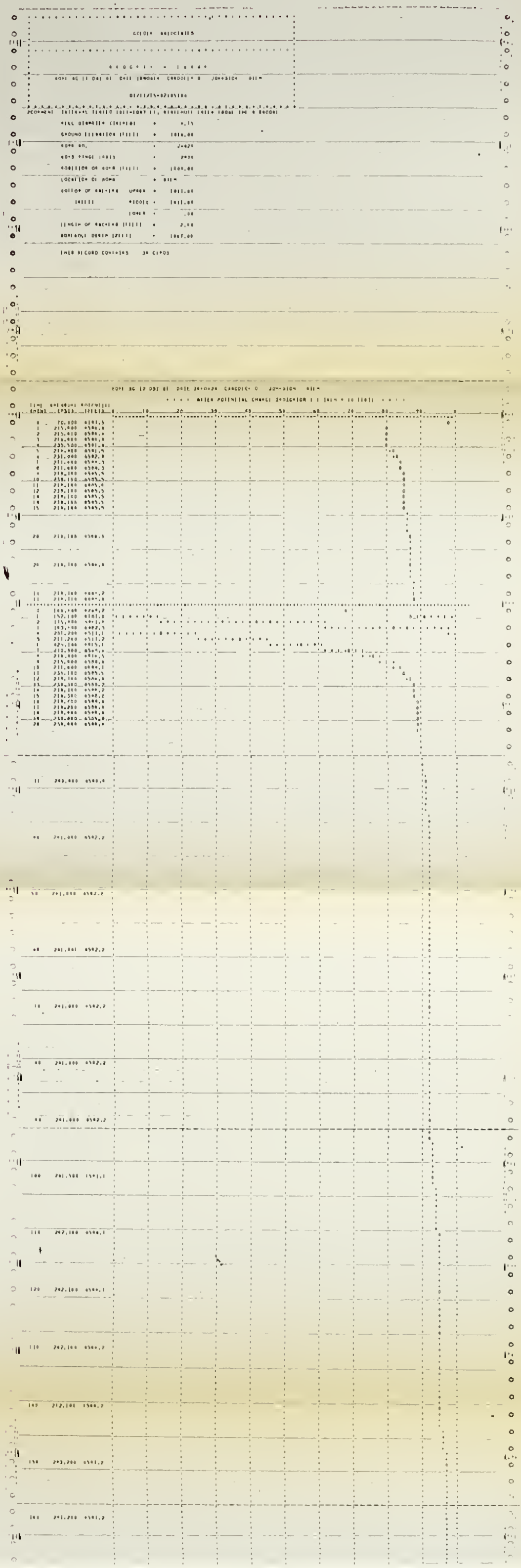
Date Dec. 8, 1974 — Interval tested 1115-1146

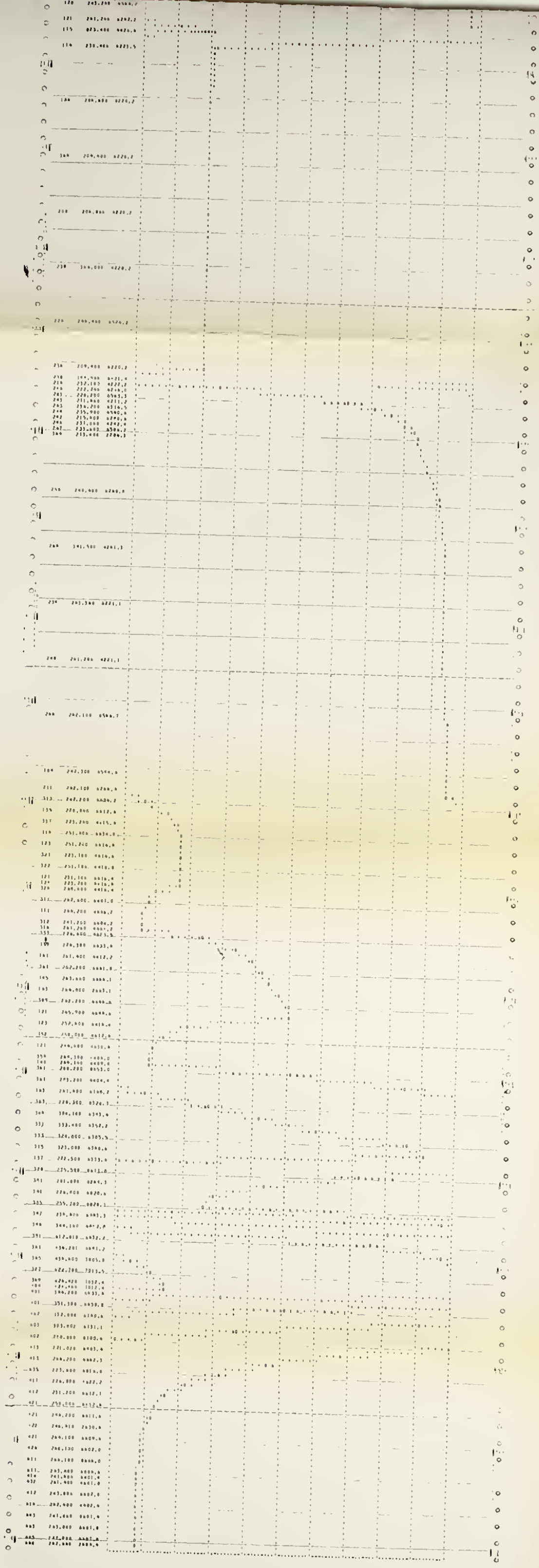
Pressure gauges Sperry Sun

Formation tested Parachute Creek above the A Groove

Golder Associates

SG- 17 — M.P.T.- 1-4





NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 7

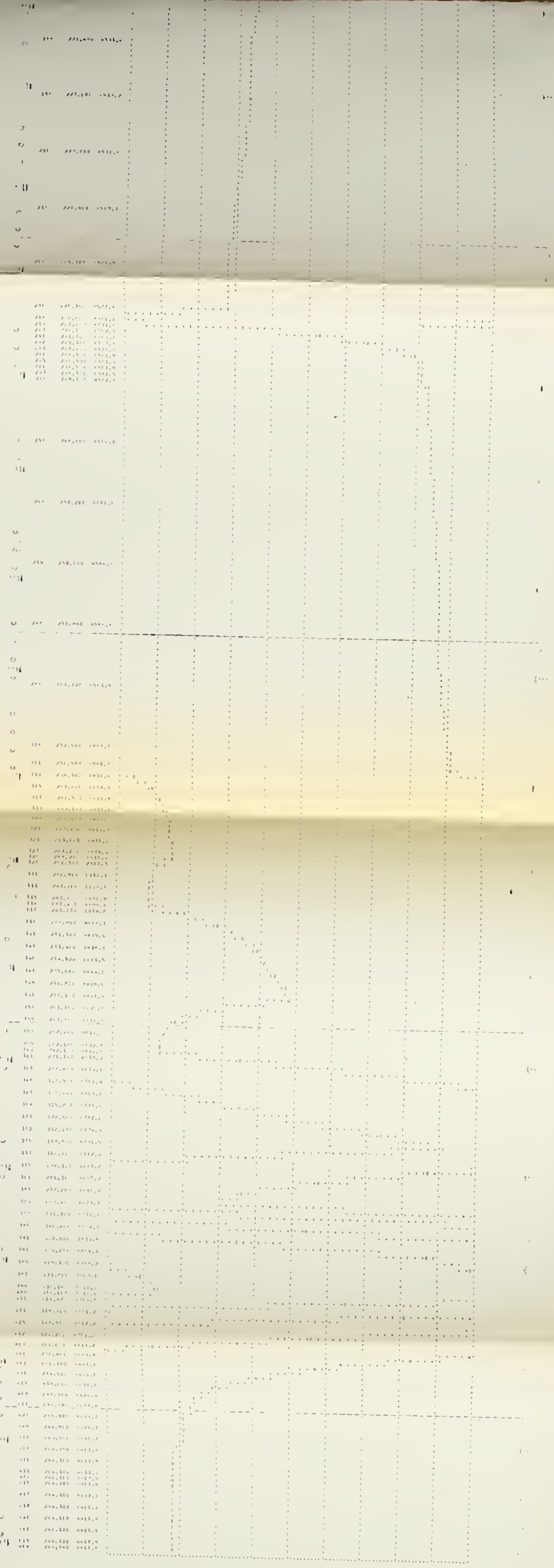
Date: Nov. 19, 1974 Interval tested: 1017-1067 ft

Pressure gauges: Johnston (Upper)

Formation tested: Parachute Creek above the A Groove

Golder Associates

SG - 17 D.S.T. - 7



NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 — Drill stem test no. 7

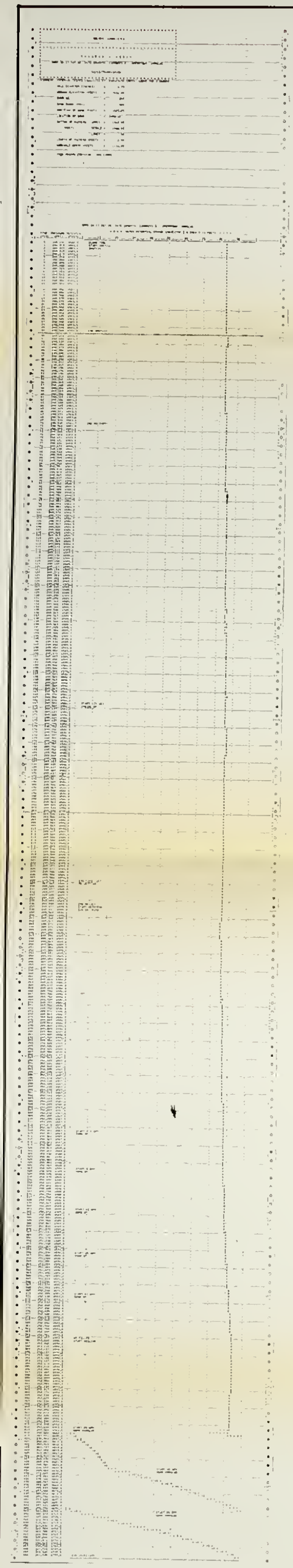
Date: Nov 19, 1974 — Interval tested: 1017-1067 ft

Pressure gauge: Johnston (Lower)

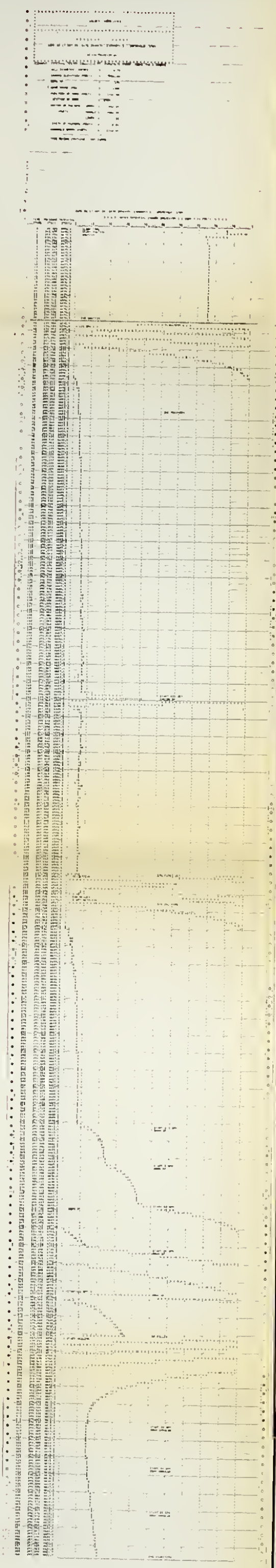
Formation tested: Parachute Creek above the A Groove

Golder Associates

SG - 17 — D.S.T. - 7



ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 Drill stem test no 8

Date: Nov. 20, 1974 Interval tested 1066-1116 ft.

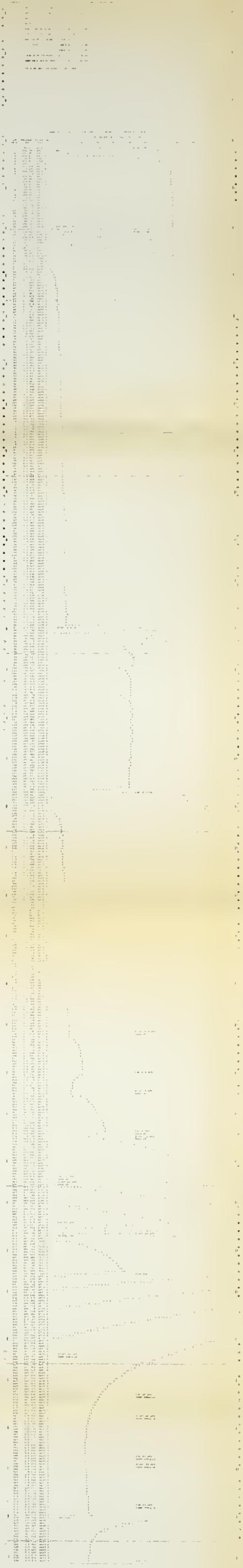
Pressure gauges. Sperry Sun

Formation tested. Parachute Creek above the A Groove

S.G - 17 D.S.T.- 8

Golder Associates

ANNULUS PRESSURE RESPONSE

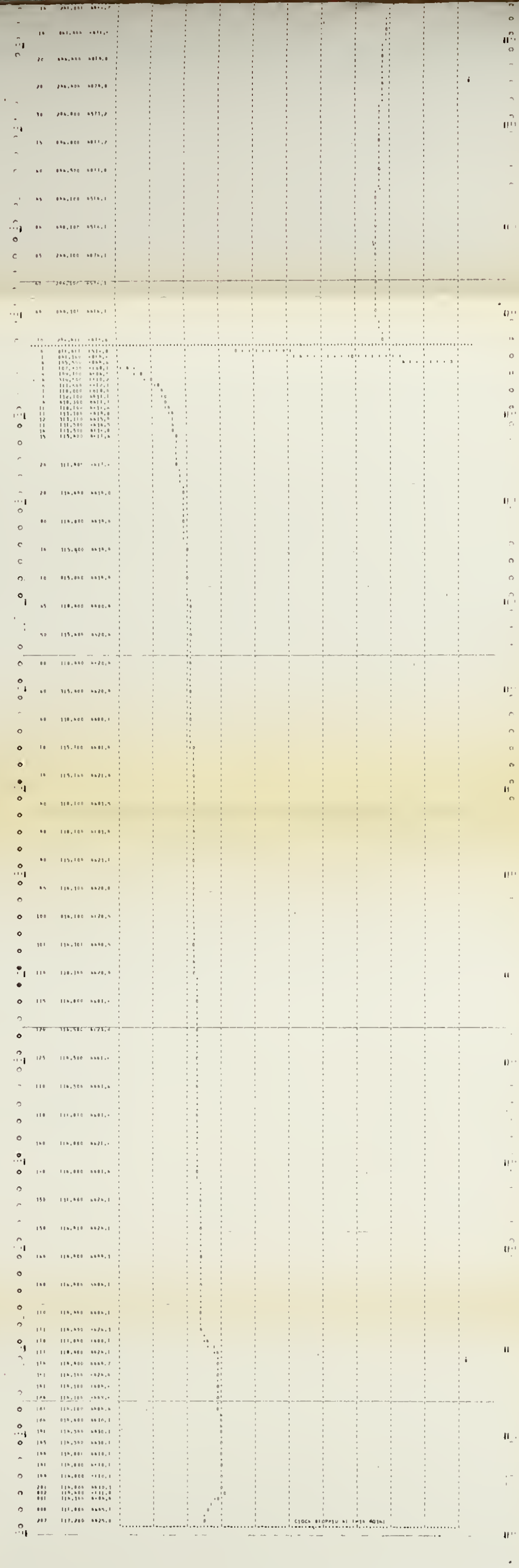


STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY

Borehole no	17	Drill stem test no	9
Date	Nov. 22, 1974	Interval tested	11160-11660 ft.
Pressure gauges	Sperry Sun		



NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 — Drill stem test no. 10

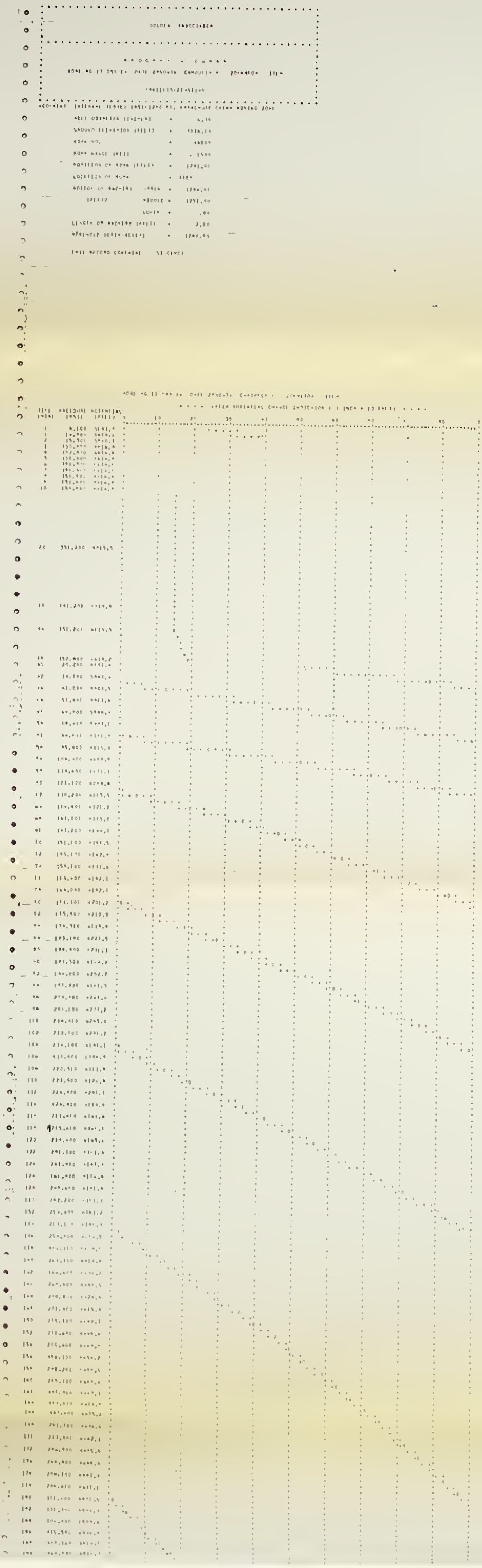
Date: Nov. 23, 1974 — Interval tested: 1164-1212 ft

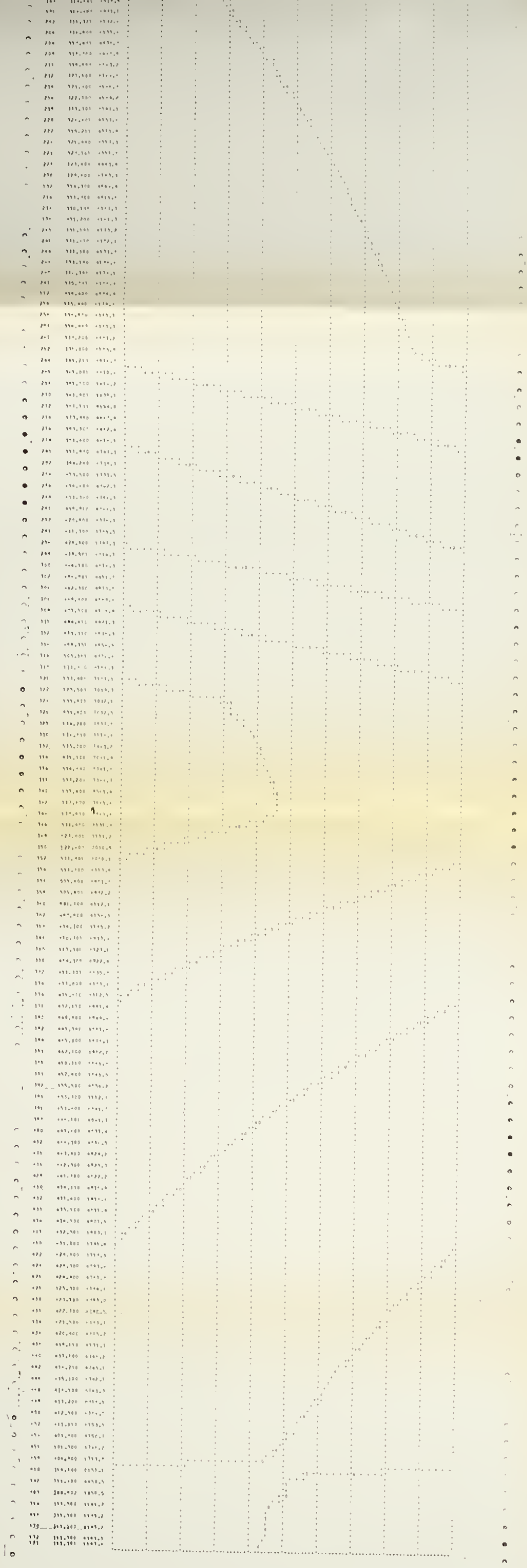
Pressure gauge: Johnston (Upper)

Formation tested: Parachute Creek above the A Groove

Golder Associates

SG - 17 — D.S.T. - 10





NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 — Drill stem test no. 14

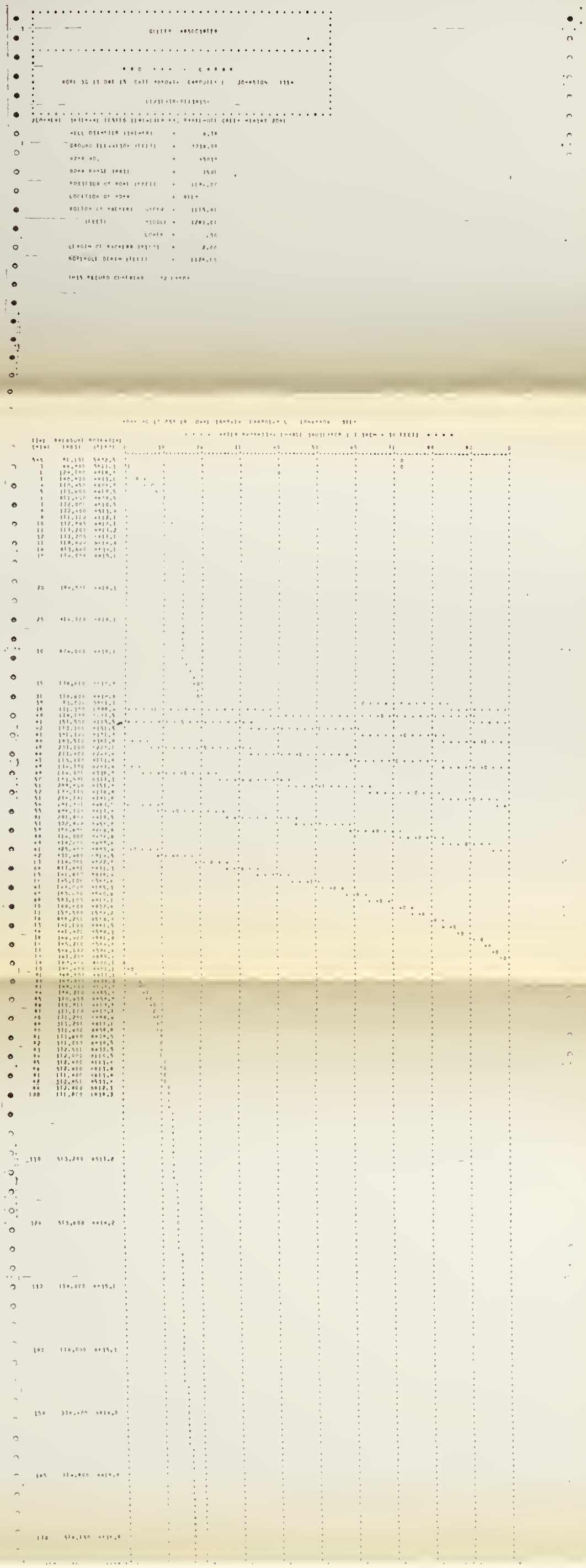
Date: Nov 28, 1974 — Interval tested: 1251-1280 ft

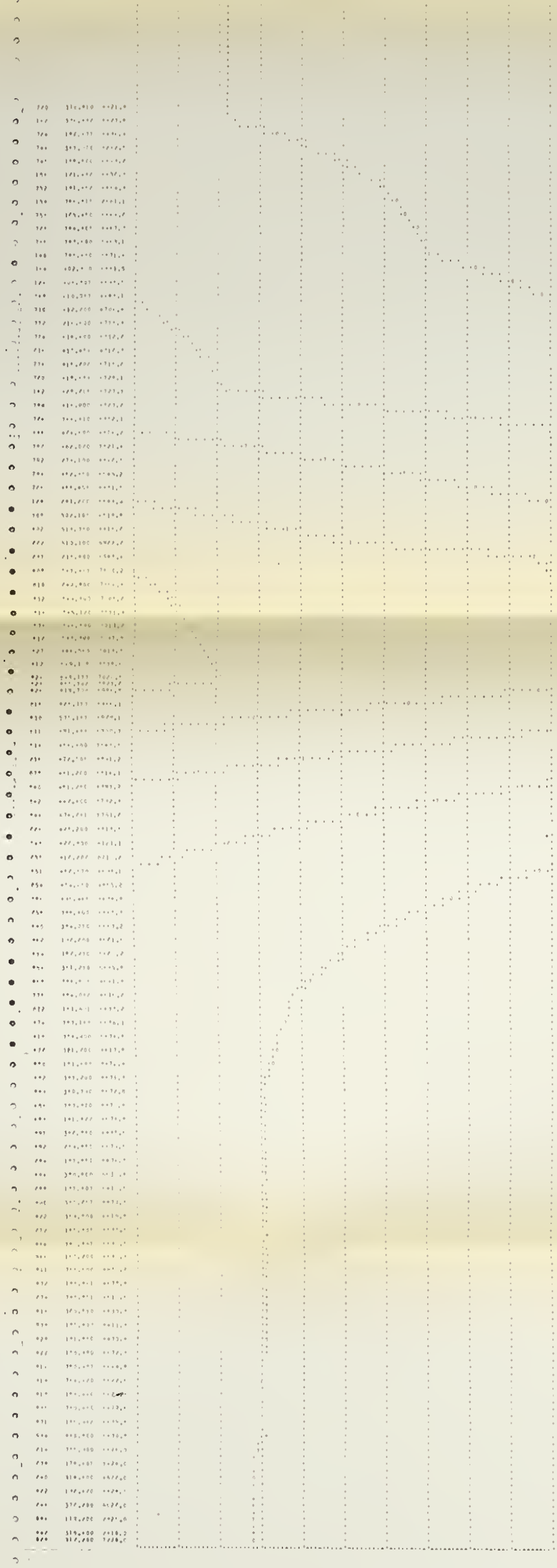
Pressure gauge: Johnston (Upper)

Formation tested: Parachute Creek Mine Roof

Golder Associates

SG - 17 — D.S.T. - 14





NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 15

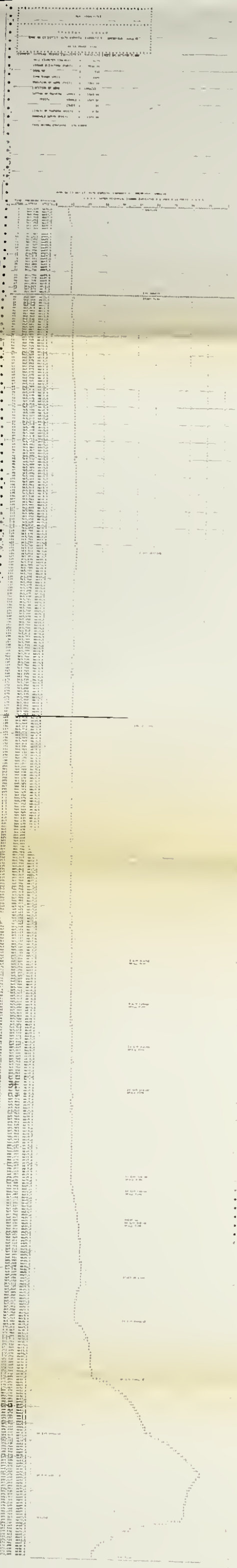
Date: Nov 30, 1974 Interval tested: 1260-1309 ft

Pressure gauge: Johnston (Lower)

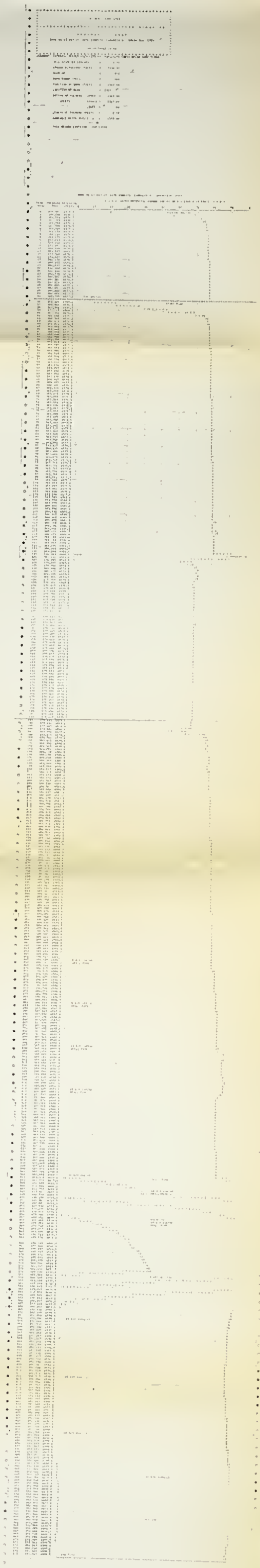
Formation tested: Parachute Creek mining zone

Golder Associates

SG - 17 D.S.T. - 15



ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 — Drill stem test no 17

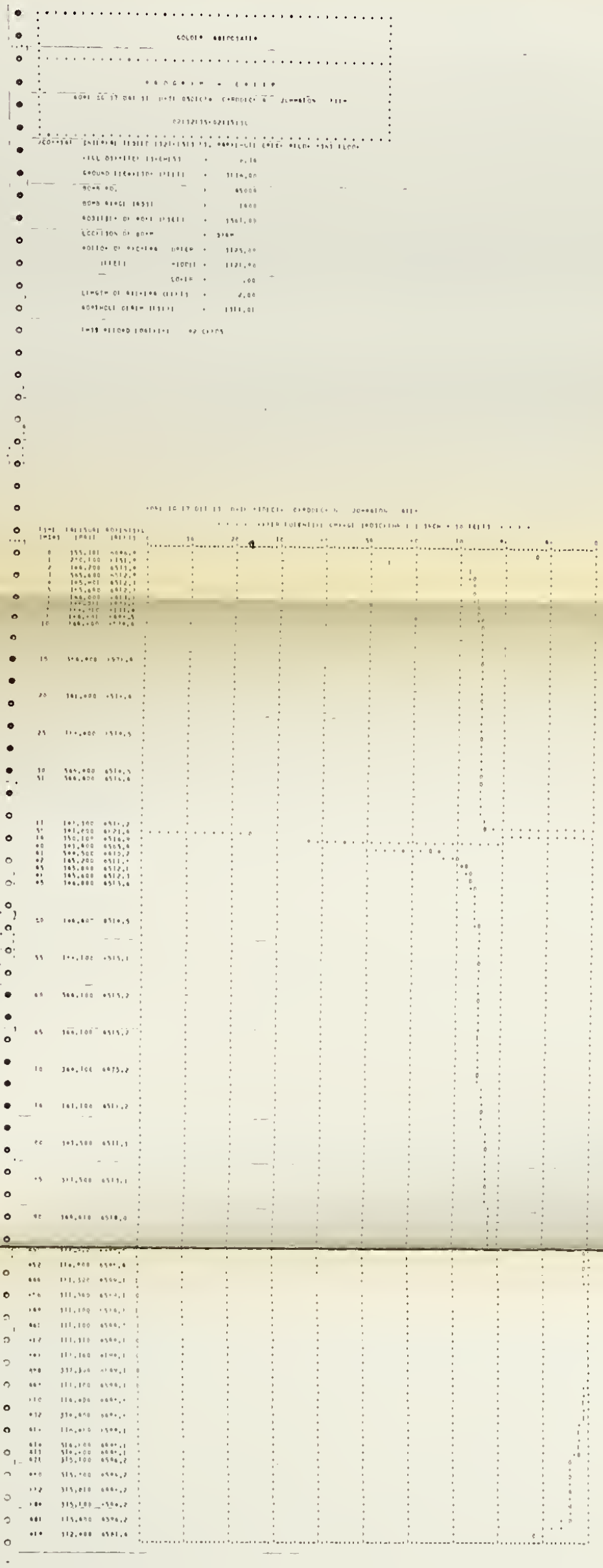
Date Dec. 3, 1974 — Interval tested 1327-1374 ft.

Pressure gauges Sperry Sun

Formation tested Parachute Creek below the Mine Floor

Golder Associates

SG- 17 — D.S.T.- 17



NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 17

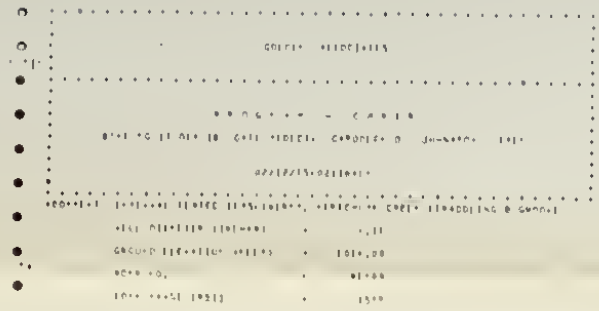
Date: Dec 3, 1974 Interval tested: 1327-1374 ft

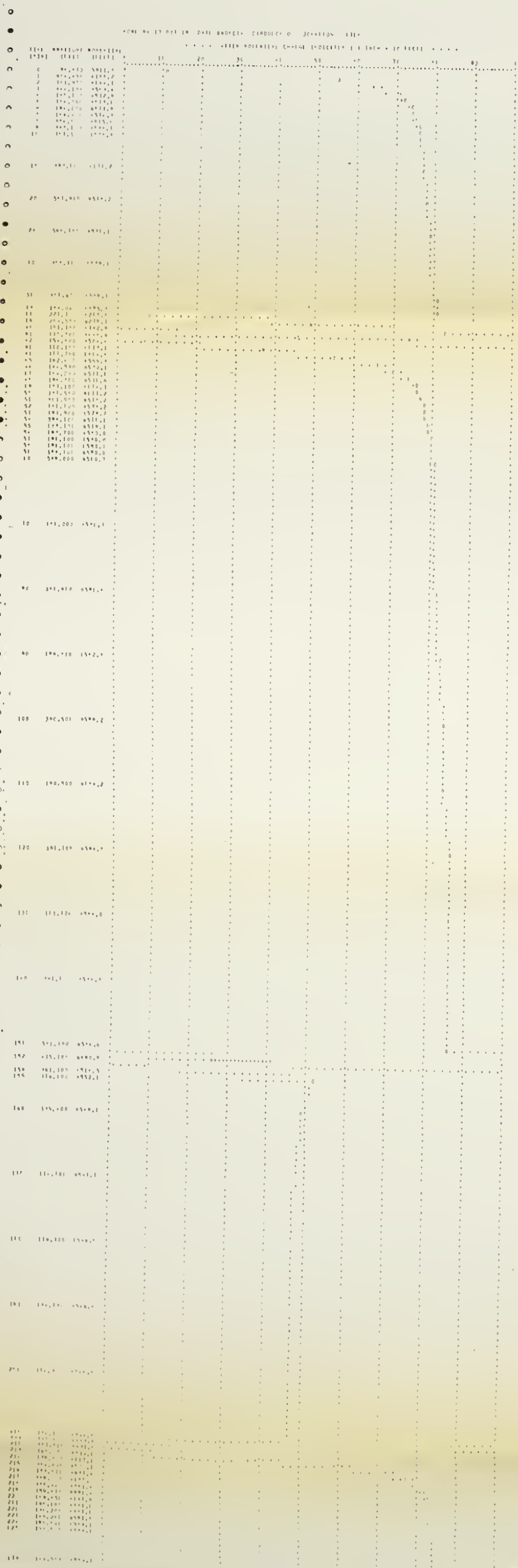
Pressure gauge: Johnston (Upper)

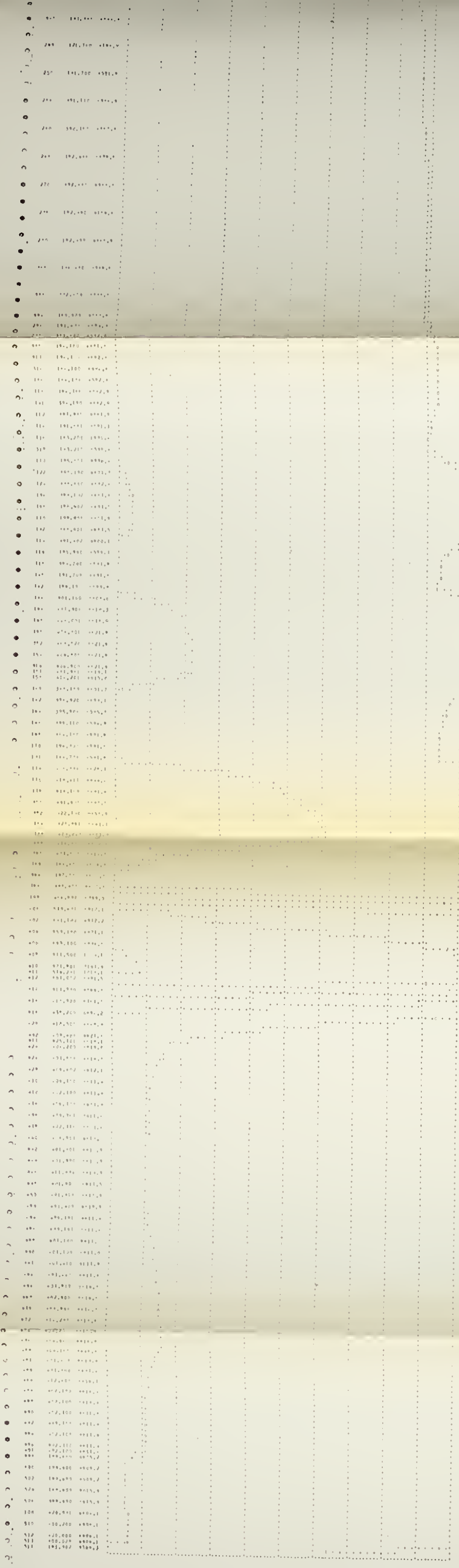
Formation tested: Parachute Creek below the mine floor

Golder Associates

SG - 17 D.S.T. - 17







NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 18

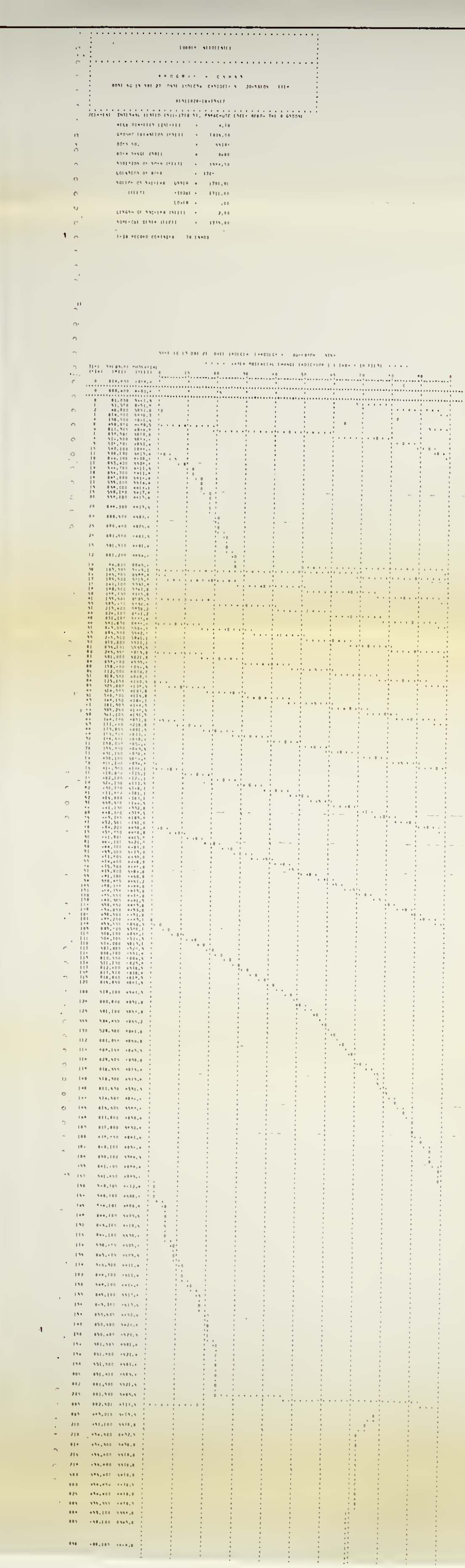
Date: Dec 4, 1974 Interval tested: 1373-1419 ft

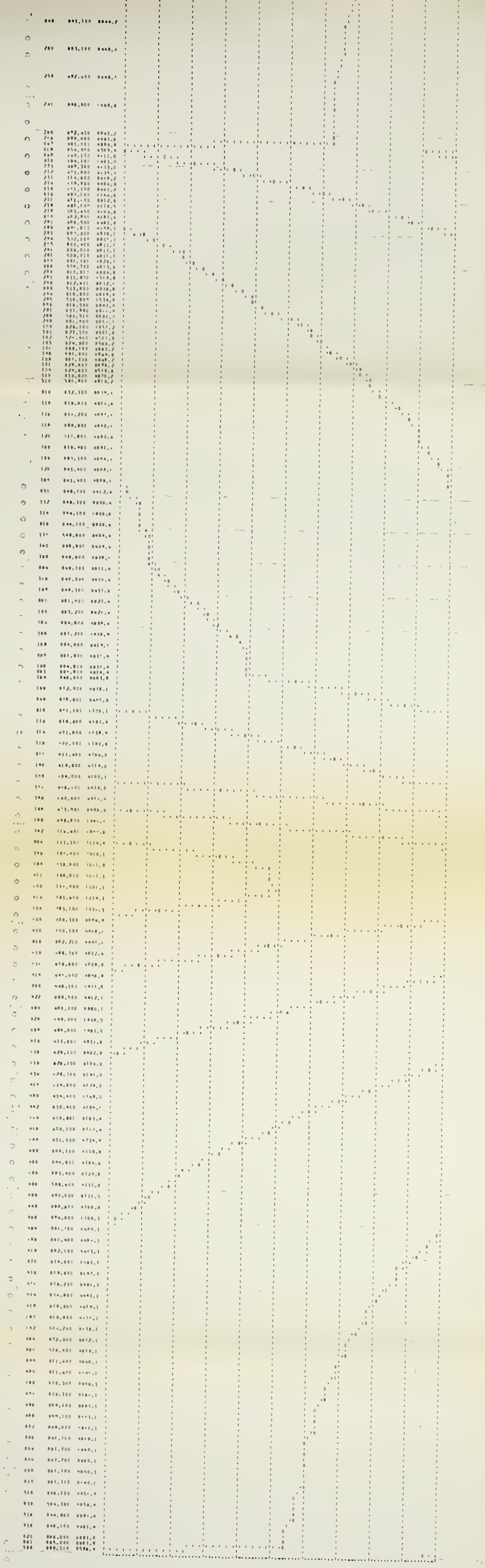
Pressure gouge: Johnston (Upper)

Formation tested: Parachute Creek straddling B Groove

Golder Associates

SG - 17 D.S.T. - 18





NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 27

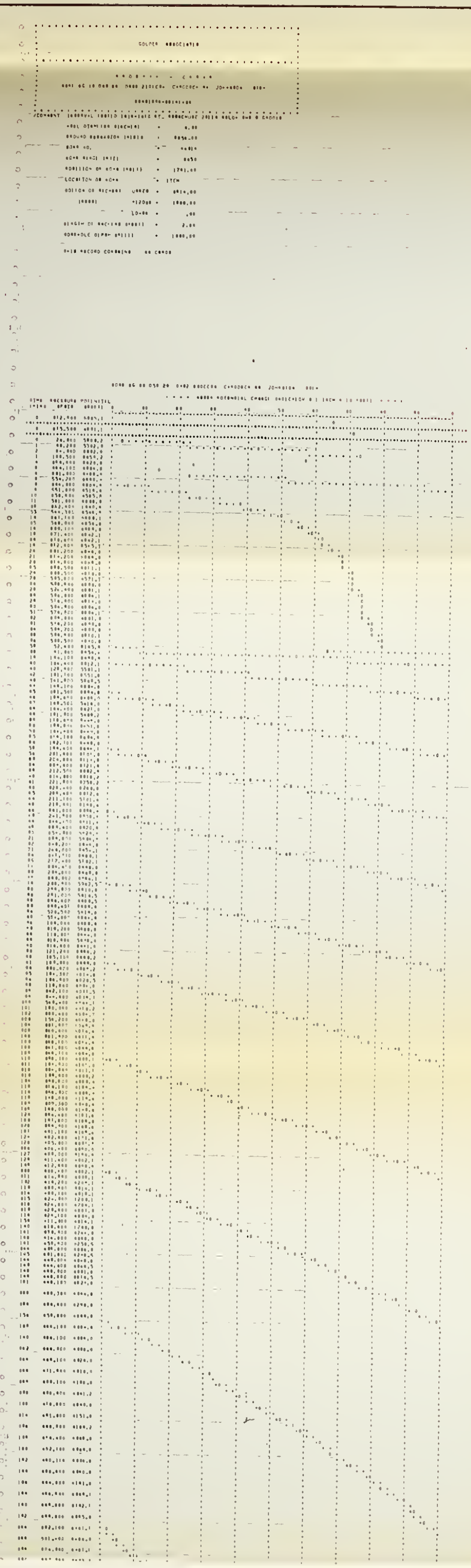
Date: Dec. 18, 1974 Interval tested: 1711 - 1770 ft.

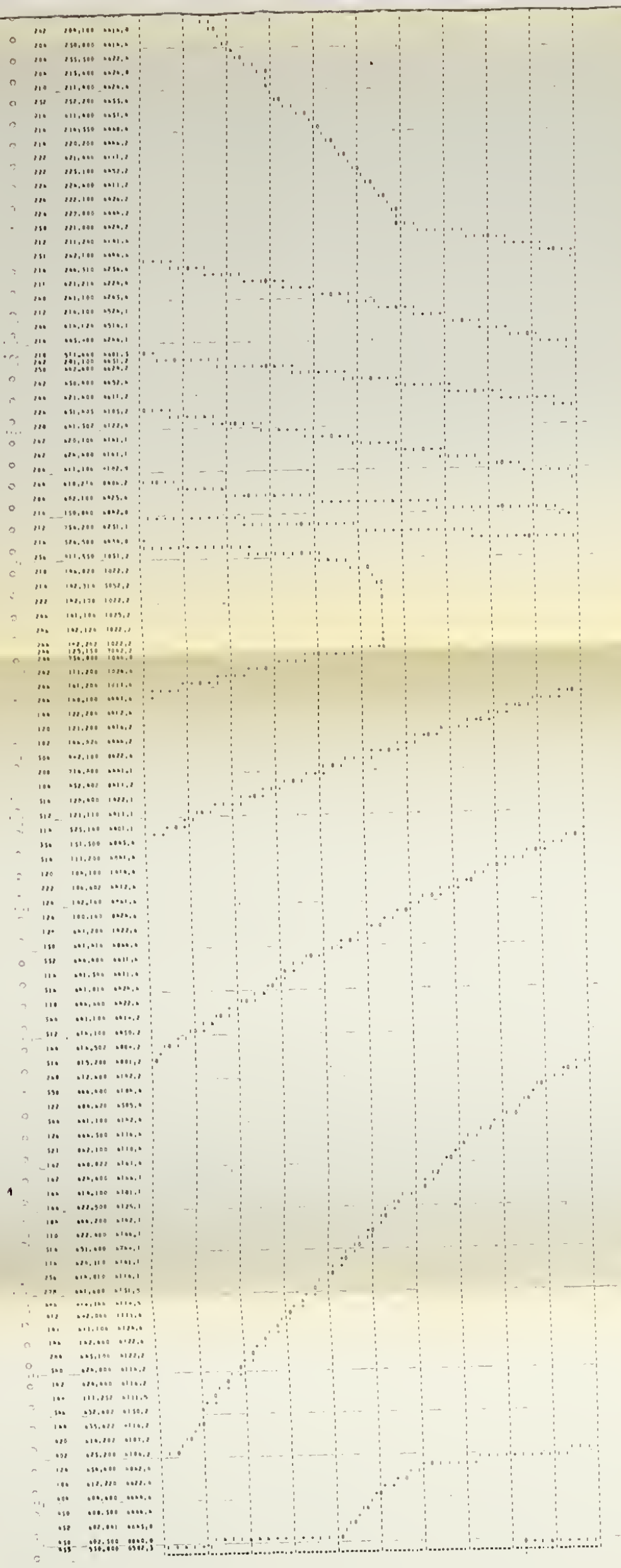
Pressure gauges: Johnston (Upper)

Formation tested: Parachute Creek below the B Groove

SG - 17 D.S.T. - 27

Golder Associates





NOTES:

1 Lower Johnston gauge malfunction during the test.

C-b TRACT HYDROLOGY

Borehole no. 17 Drill stem test no. 29

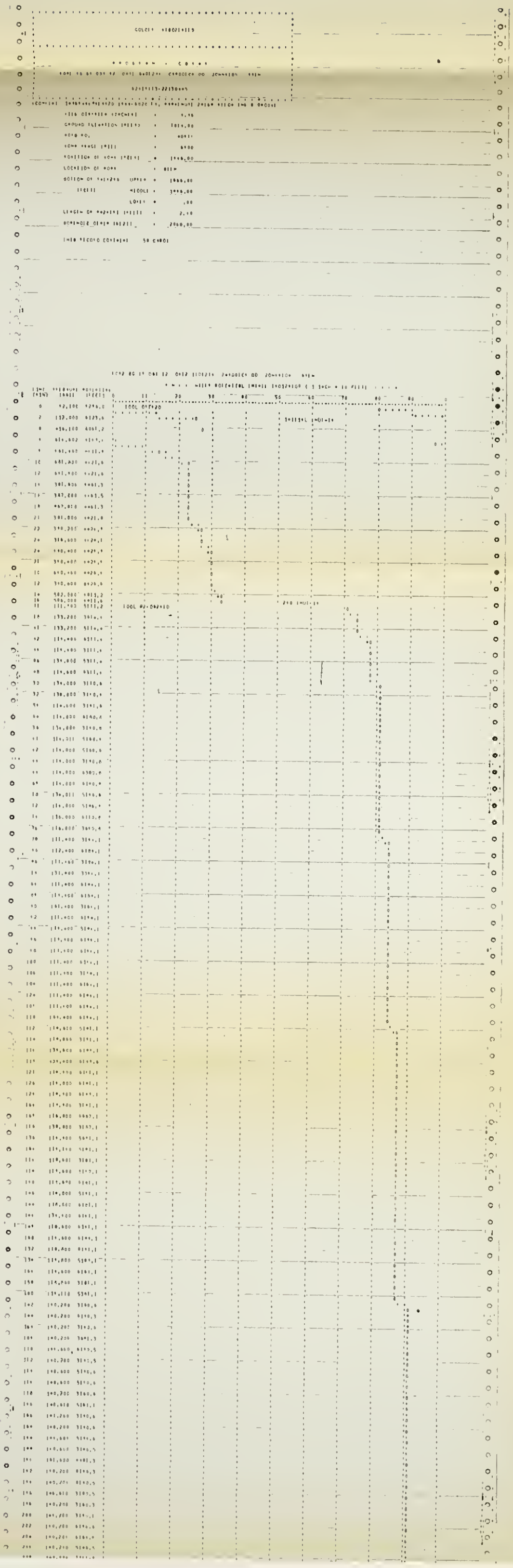
Date: Dec 21, 1974 Interval tested: 1818-1870 ft

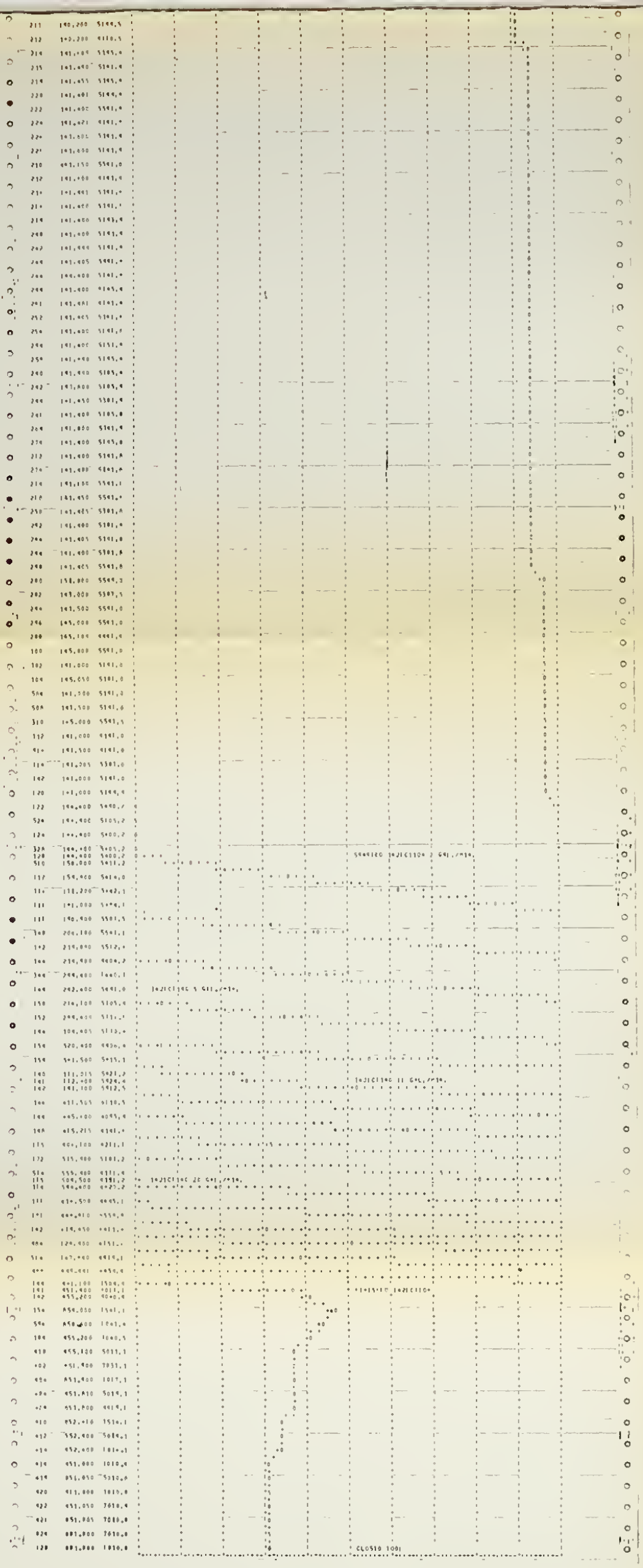
Pressure gauge: Johnston (Upper)

Formation tested: Parachute Creek below the B Groove

Golder Associates

SG - 17 D.S.T. - 29





NOTES:

C-b TRACT HYDROLOGY

Borehole no. 17 — Drill stem test no. 32

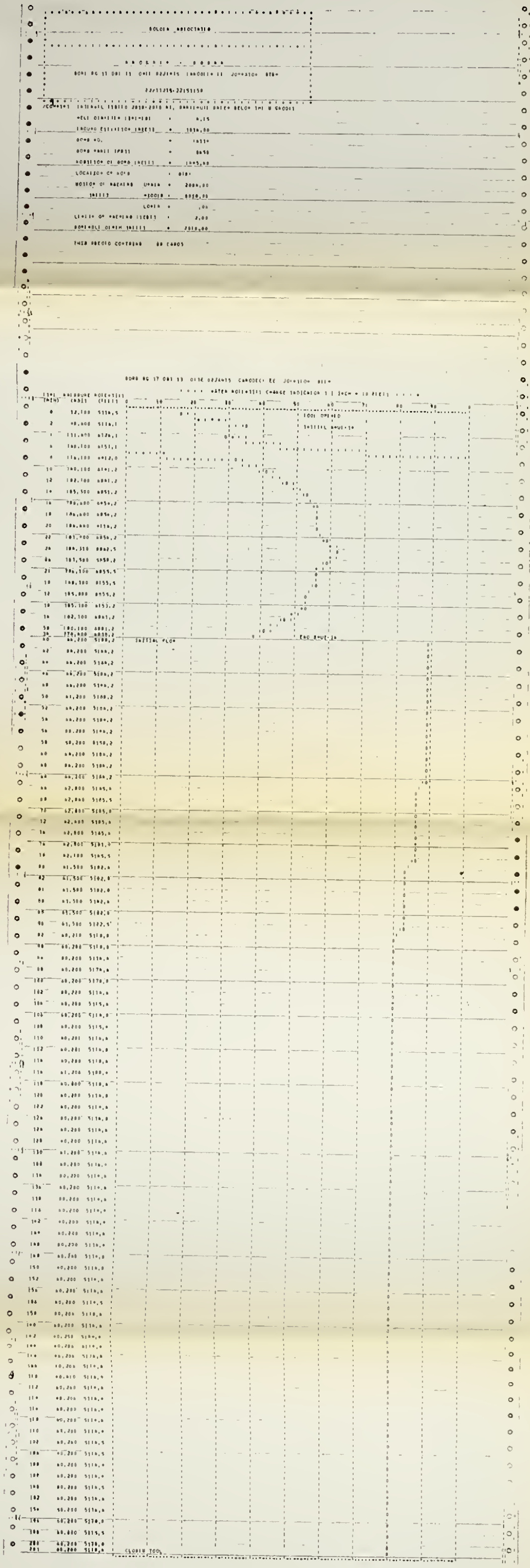
Date: Dec 31, 1974 — Interval tested: 1966-2020 ft.

Pressure gauge: Johnston (Lower)

Formation tested: Parachute Creek above the lower rich zone

Golder Associates

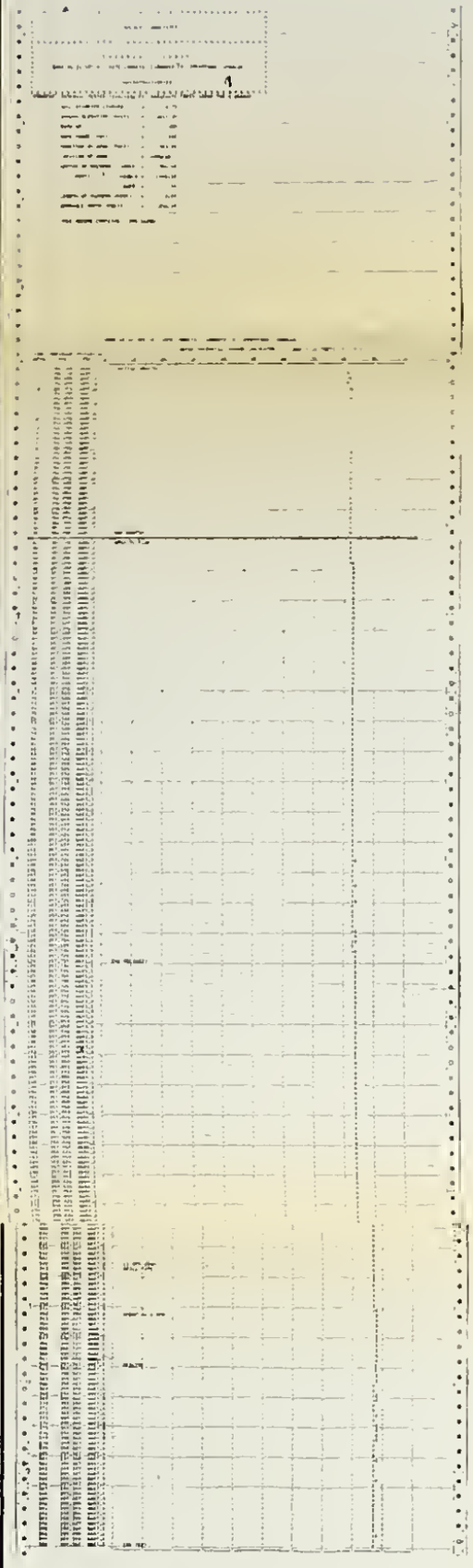
SG - 17 — D.S.T. - 32



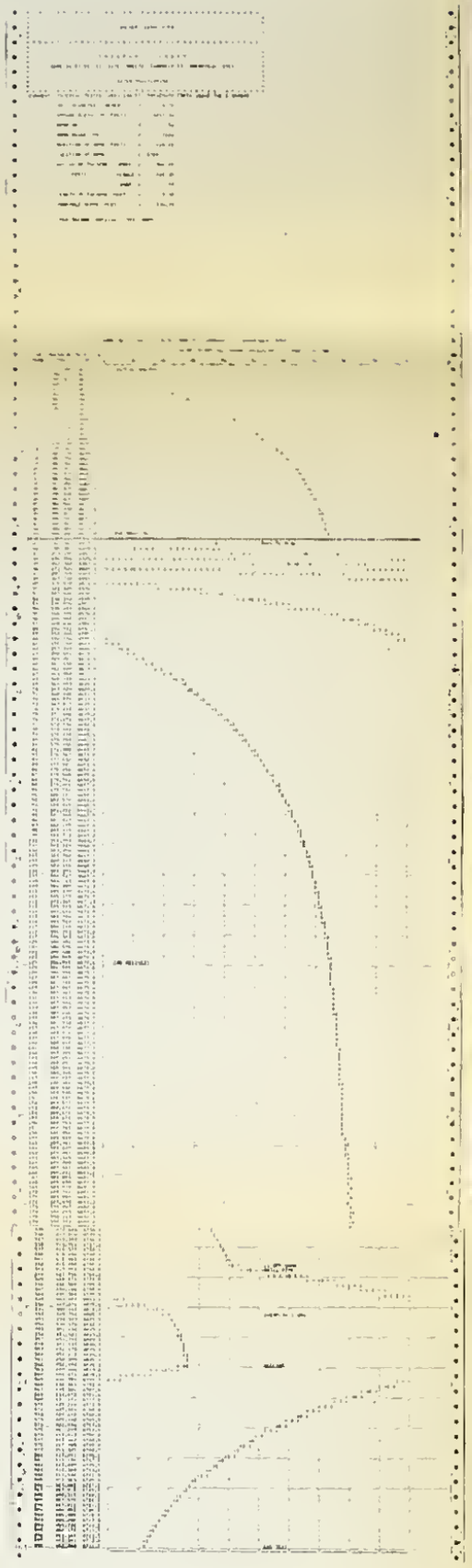
NOTES:

C-b TRACT HYDROLOGY	
Borehole no. 17	Drill stem test no. 33
Date: Jan. 2, 1975	Interval tested: 2018 - 2070 ft.
Pressure gauge: Johnston (Upper)	
Formation tested: Parachute Creek Lower rich zone	
SG - 17	D.S.T. - 33

Golder Associates



ANNULUS PRESSURE RESPONSE



STEM PRESSURE RESPONSE

NOTES:

C-b TRACT HYDROLOGY

Borehole no 21 Drill stem test no 1

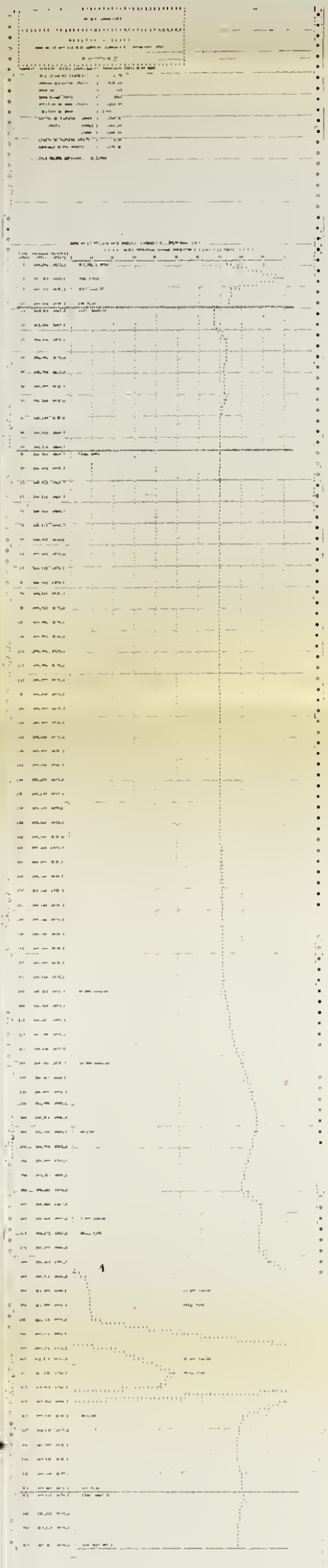
Date Dec 19, 1974 Interval tested 1000-1036 ft

Pressure gauges Sperry Sun

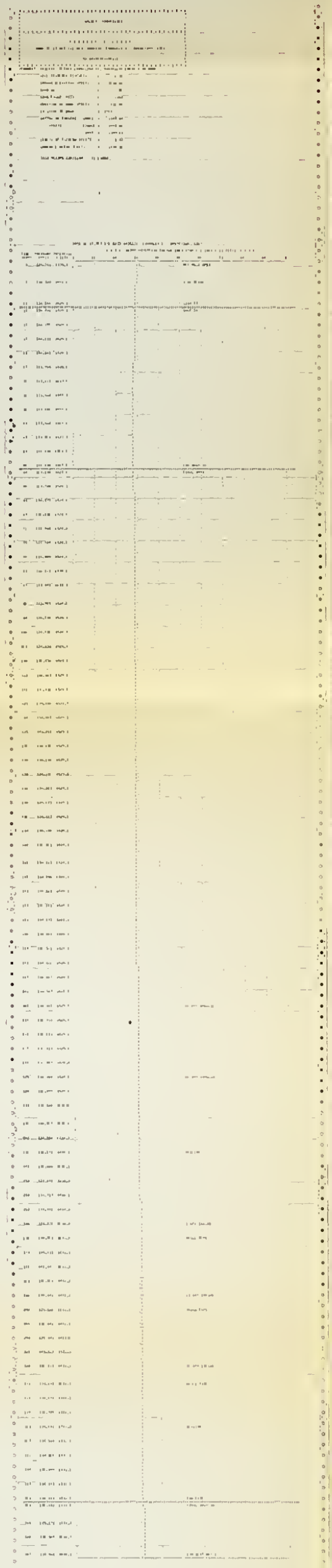
Formation tested Parachute Creek above the mine roof

Golder Associates

SG- 21 D.S.T- 1



ZONE 1 PRESSURE RESPONSE



ZONE 2 PRESSURE RESPONSE

II B-323

NOTES:

C-b TRACT HYDROLOGY

Borehole no 17 — Multiple packer test no 1-2

Date Dec. 8, 1974 — Interval tested 1249-1280 ft

Pressure gauges Sperry Sun

Formation tested. Parachute Creek Mine Roof

Golder Associates

SG- 17 — M.P.T.- 1-2

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DRILL STEM TESTS

WELL SG-17

COMPANY ATLANTIC RICHFIELD COMPANY WELL FEDERAL S-G-17 TEST NO. 1 COUNTY RIO BLANCO STATE COLORADO

JOHNSTON

Schlumberger

technical report

II B-325

F.R. #04361 C

JOHNSTON

PRESSURE LOG*

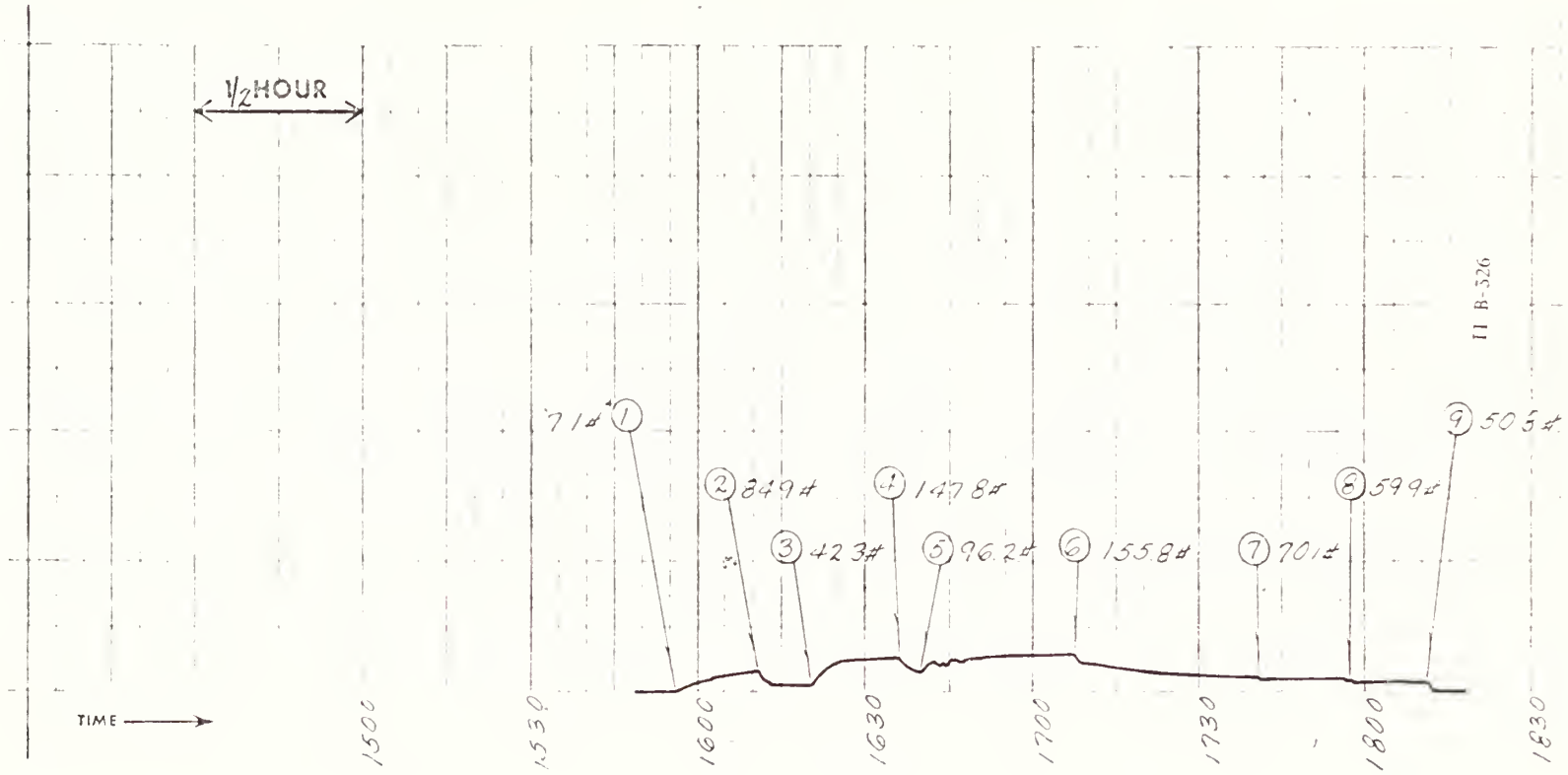
Field Report No. 04361C

Instrument: Number J-029

Capacity 2300 p.s.i.

Depth 365 ft.

*a continuous tracing of the original chart



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SURFACE INFORMATION

Operation (Rate of Flow)	Time	Pressure (P.S.I.G.)	Surface Choke
Opened Tool	1425	-	-
LIGHT BLOW			
CLOSED TOOL	1426	-	-
FINISHED SHUT-IN	1456	-	-
RE-OPENED TOOL	1513	-	-
LIGHT BLOW			
STARTED INJECTING WATER INTO FORMATION	1557	-	-
PUMPED IN AT 5 GAL./MIN. FOR 15 MINUTES. SHUT DOWN FOR 3 MINUTES. PUMPED IN AT 10 GAL./MIN. FOR 15 MINUTES. SHUT DOWN FOR 9 MINUTES. PUMPED IN AT 20 GAL./MIN. FOR 15 MINUTES. SHUT DOWN FOR 16 MINUTES. PUMPED IN AT 20 GAL./MIN. FOR 15 MINUTES. LET PRESSURE BLEED OFF FOR 33 MINUTES. CYCLED TOOL.			
PULLED PACKER LOOSE	1815	-	-

Cushion Type	Amount	Pressure	Bottom Choke
	-		Size 3/4"

EQUIPMENT & HOLE DATA

Type Test: M.F.E. OPEN HOLE
Formation Tested: GREEN RIVER
Elevation: 7036 G.L. Ft.
Net Productive Interval: - Ft.
Estimated Porosity: 20 %
All Depths Measured From: GROUND LEVEL
Total Depth: 436 Ft.
Main Hole/Casing Size: 6 3/4"
Rot Hole/Liner Size: -
Drill Collar Length: 327' I.D. 2 1/8"
Drill Pipe Length: 30' I.D. 2 5/8"
Packer Depth(s): 380 & 386 Ft.

MULTI-FLOW EVALUATOR FLUID SAMPLE DATA

Sampler Pressure: _____ P.S.I.G. at Surface
Recovery: Cu. Ft. Gas: _____
cc. Oil: _____
cc. Water: _____
cc. Mud: _____
Tot. Liquid cc.: _____
Gravity: _____ °API @ _____ °F.
Gas/Oil Ratio: _____ cu. ft./bbl.

		RESISTIVITY	CHLORIDE CONTENT
Recovery Water	@ °F.		ppm
Recovery Mud	@ °F.		
Recovery Mud Filtrate	@ °F.		ppm
Mud Pit Sample	@ °F.		
Mud Pit Sample Filtrate	@ °F.		ppm

MUD DATA

Mud Type: - Wt.: -
Viscosity: - Water Loss: - C.C.
Resist. of Mud: - @ - °F; of Filtrate: - @ - °F
Chloride Content: - PPM

RECOVERY DESCRIPTION	FEET	BARRELS	% OIL	% WATER	% OTHERS	API GRAVITY	RESISTIVITY	CHL. PPM
(NO WATER RECOVERY)						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	

Remarks: DUE TO THE ABSENCE OF FLUID IN THE HOLE THERE WAS NO PRESSURE INFLUENCE ON THE CHARTS PRIOR TO START OF INJECTION.

Address: SHALER MOTEL; RIFLE, COLORADO 81650; ATTN: MR. D. B. TAIT

Company: ATLANTIC RICHFIELD COMPANY Field: SORGHUM GULCH
Well: FEDERAL S-G-17 II B-327 Location: SEC. 16-3S-96W
Test Interval: 386' TO 436' Test #: 1 Date: 11-7-74

County: RIO BLANCO State: COLORADO
Technician: MC LAUGHLIN (VERNAL) Test Approved By: MR. D. B. TAIT

Field Report No.: 04361 C
No. Reports Requested: 5

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...found a better way

PRESSURE DATA

Instrument No.		J-029			Field Report No. 04361 C
Capacity (P.S.I.G.)		2800			
Instrument Depth		365'			
Instrument Opening		INSIDE			TIME DATA
Pressure Gradient P.S.I./Ft.					
Well Temperature °F.		80			Time Given / Time Computed
Initial Hydrostatic Mud	A	-			
Initial Shut-in	B	-			- Mins. / Mins.
Initial Flow	C	-			- Mins. / Mins.
					- Mins. / Mins.
					- Mins. / Mins.
Final Flow	D	-			- Mins. / Mins.
Final Shut-in	E	-			- Mins. / Mins.
Final Hydrostatic Mud	F	-			

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

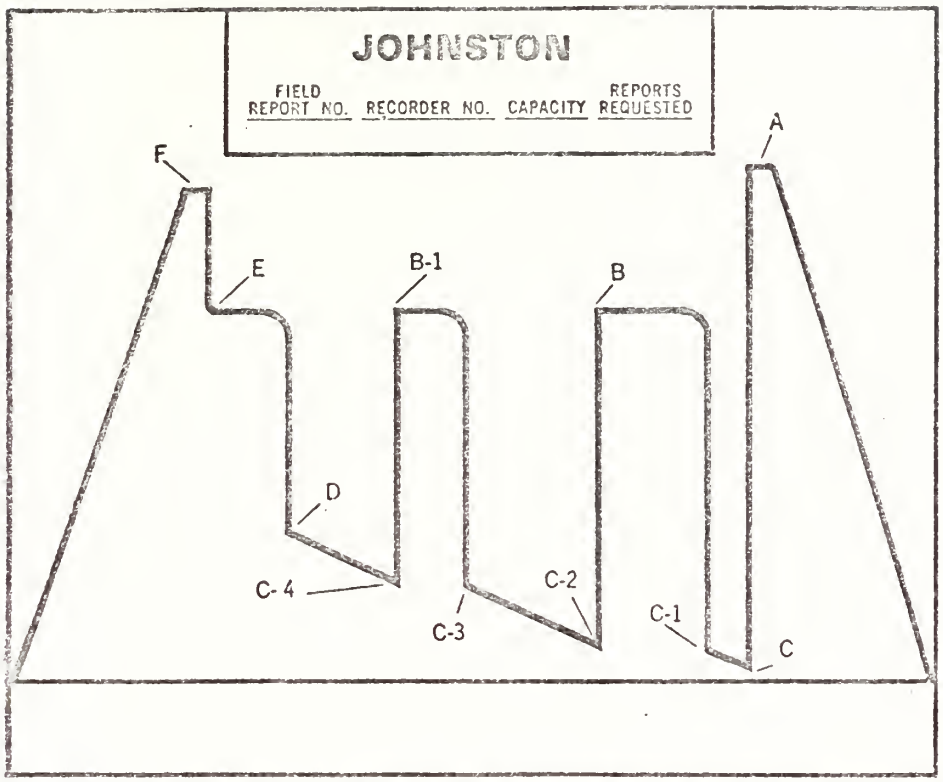
PRESSURE INCREMENTS

POINTS

Point	Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point	Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point	Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
1	0	7.1			56	152.9			116	63.3	
	2	29.3			58	155.8			118	62.7	
	4	44.0			60	155.8			120	62.2	
	6	55.9			62	155.8		8	121	59.9	
	8	70.7			64	155.8			122	52.9	
	10	76.9			66	155.8			124	52.0	
	12	80.3			68	155.8			126	52.0	
	14	84.9			70	155.8			128	52.5	
2	15	84.9		6	71	155.8			130	52.5	
	16	54.8			72	134.2			132	50.8	
	18	41.7			74	118.9			134	50.8	
	20	41.7			76	113.8		9	135	50.8	
	22	41.7			78	108.1					
3	24	42.3			80	103.0					
	26	107.5			82	97.9					
	28	127.4			84	93.4					
	30	136.5			86	90.0					
	32	139.9			88	87.1					
	34	143.3			90	93.7					
	36	145.6			92	81.5					
	38	147.3			94	79.2					
4	39	147.8			96	77.5					
	40	120.0			98	75.2					
	42	96.2			100	72.9					
	43	96.2			102	71.2					
	44	132.5		7	104	70.1					
	46	126.3			106	66.1					
	48	135.3			108	66.1					
	50	139.3			110	66.1					
	52	147.8			112	65.0					
	54	152.4			114	63.9					
	CONTINUED				CONTINUED						

II B-328

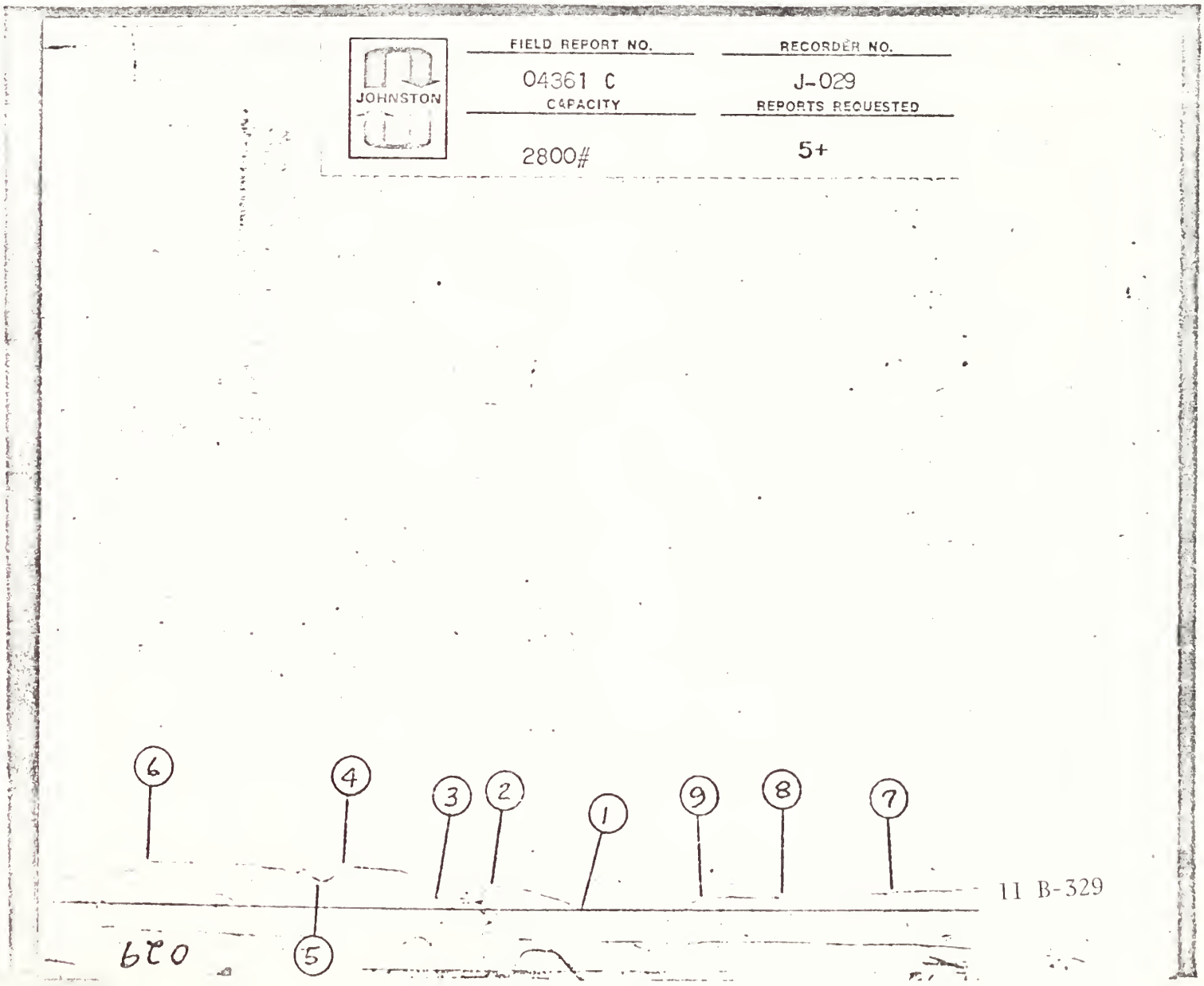
GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.



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PRESSURE DATA

Instrument No.		J-405		
Capacity (P.S.I.G.)		2800		
Instrument Depth		418'		
Instrument Opening		OUTSIDE		
Pressure Gradient P.S.I./Ft.				
Well Temperature °F.		80		
Initial Hydrostatic Mud	A	-		
Initial Shut-in	B	-		
Initial Flow	C	-		
Final Flow	D	-		
Final Shut-in	E	-		
Final Hydrostatic Mud	F	-		

Field Report No. 04361 C

TIME DATA

Time Given	Time Computed
- Mins.	Mins.
- Mins.	Mins.
- Mins.	Mins.
- Mins.	Mins.
- Mins.	Mins.
- Mins.	Mins.

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

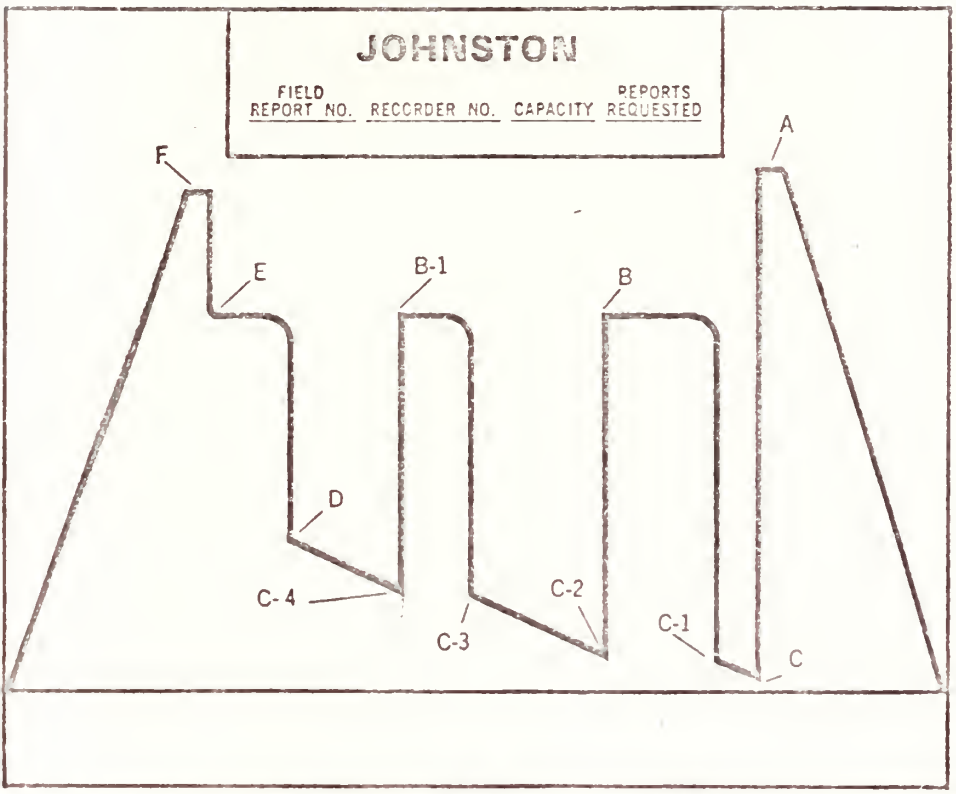
PRESSURE INCREMENTS

POINTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
0	12.4		56	166.9		116	84.8	
2	40.7		58	169.2		118	84.3	
4	58.8		60	169.7		120	84.3	
6	71.3		62	169.7		8 121	84.3	
8	85.4		64	169.7		122	77.5	
10	95.0		66	169.7		124	73.0	
12	99.0		68	169.7		126	73.0	
14	102.4		70	169.7		128	73.0	
15	104.1		6 71	169.7		130	73.0	
16	91.6		72	164.1		132	73.0	
18	69.6		74	139.2		134	72.4	
20	65.0		76	133.5		9 135	72.4	
22	65.6		78	128.4				
24	65.6		80	122.8				
26	116.5		82	117.7				
28	139.7		84	113.7				
30	151.1		86	110.3				
32	155.6		88	106.9				
34	158.4		90	104.1				
36	161.3		92	101.8				
38	162.9		94	99.6				
39	164.1		96	97.3				
40	155.6		98	95.0				
42	119.9		100	93.3				
43	117.1		102	92.2				
44	140.9		7 104	90.5				
46	153.9		106	84.8				
48	144.3		108	84.8				
50	155.6		110	84.8				
52	159.6		112	84.8				
54	166.9		114	84.8				
CONTINUED			CONTINUED					

II B-330

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

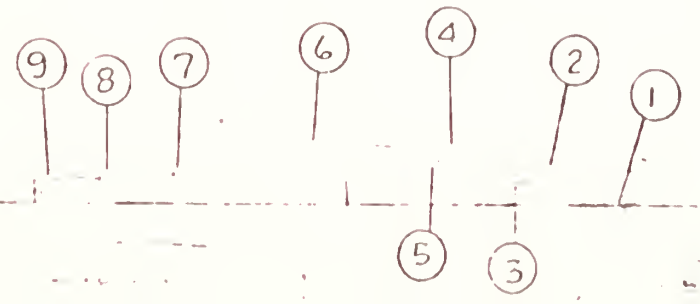
The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.

405

JOHNSTON

FIELD REPORT NO.	RECORDER NO.
04361 C	J-405
CAPACITY	**REPORTS REQUESTED**
2800#	5+



11 B-331

COMPANY ATLANTIC RICHFIELD COMPANY WELL FEDERAL S-G-17 TEST NO. 2 COUNTY RIO BLANCO STATE COLORADO

JOHNSTON

Schlumberger

technical report

II B-332

F. R. # 04362 C

JOHNSTON

PRESSURE LOG*

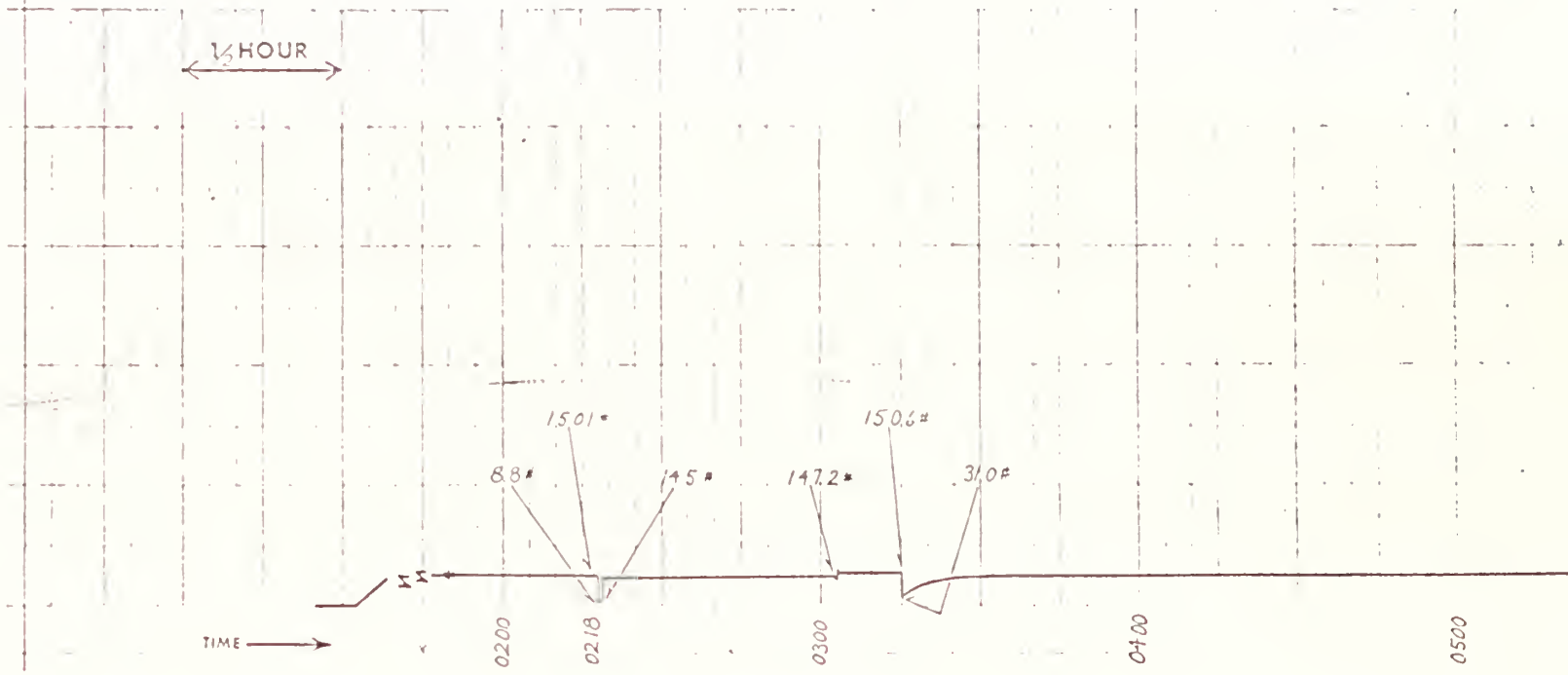
Field Report No. 04312 C

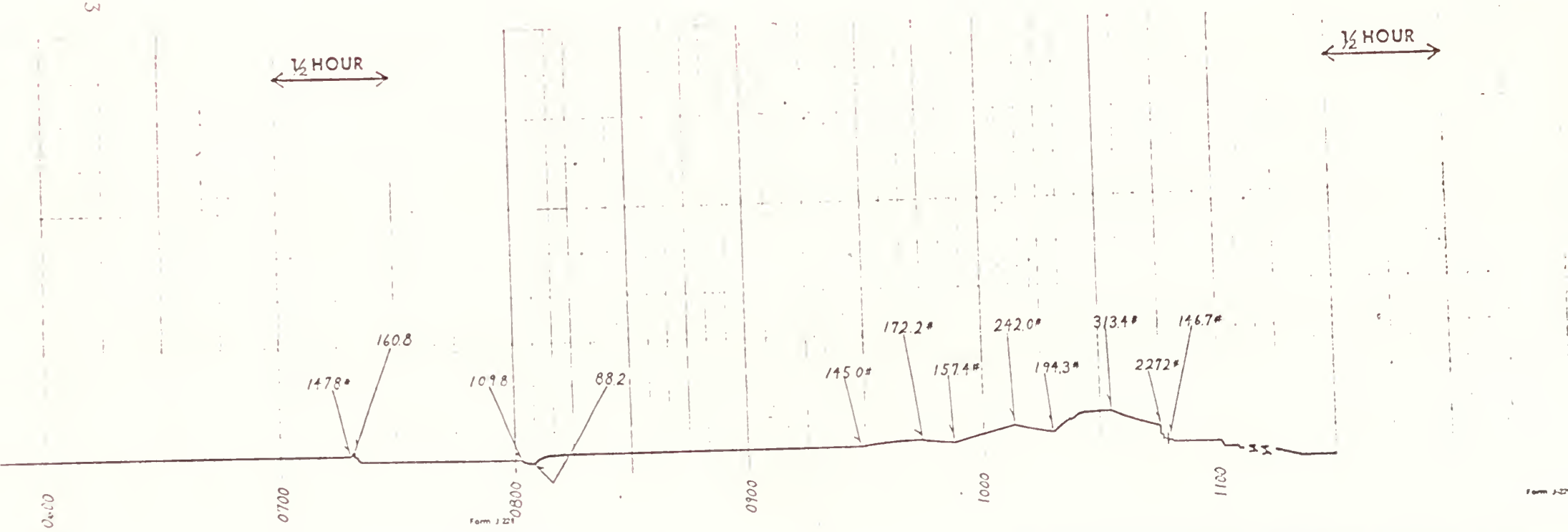
Instrument: Number T-029

Capacity 2800 p.s.i.

Depth 771 ft.

*a continuous tracing of the original chart





II B-333

JOHNSTON
...found a better way

SURFACE INFORMATION

Description (Rate of Flow)	Time	Pressure (P.S.I.G.)	Surface Choke
Opened Tool	0218	-	-
MEDIUM BLOW			
CLOSED FOR INITIAL SHUT-IN	0230	-	-
FINISHED SHUT-IN	0300	-	-
RE-OPENED TOOL	0315	-	-
INJECTING WATER INTO FORMATION. PUMPED IN 5 GAL./MIN. FOR 15 MINUTES.			
PUMPED IN 10 GAL./MIN. FOR 15 MINUTES, WITH 10 MIN. PRESSURE DECLINE. PUMPED IN 20 GAL./MIN. FOR 15 MINUTES, WITH 10 MIN. PRESSURE DECLINE.			
PULLED PACKER LOOSE	1045	-	-

Cushion Type	Amount	Pressure	Bottom Choke
	-		Size 3/4"

EQUIPMENT & HOLE DATA

Type Test: M. F. E. OPEN HOLE
Formation Tested: GREEN RIVER
Elevation: 7036' GRD. Ft.
Net Productive Interval: - Ft.
Estimated Porosity: 20 %
All Depths Measured From: GROUND LEVEL
Total Depth: 808 Ft.
Main Hole/Casing Size: 6 3/4"
Rat Hole/Liner Size: -
Drill Collar Length: 327' I.D. 2 1/8"
Drill Pipe Length: 439' I.D. 2 5/8"
Packer Depth(s): 784 & 788 Ft.

MULTI-FLOW EVALUATOR FLUID SAMPLE DATA

Sampler Pressure: P.S.I.G. at Surface
Recovery: Cu. Ft. Gas
cc. Oil
cc. Water
cc. Mud
Tot. Liquid cc.
Gravity: °API @ °F.
Gas/Oil Ratio: cu. ft./bbl.

		RESISTIVITY	CHLORIDE CONTENT
Recovery Water	@ °F.		ppm
Recovery Mud	@ °F.		
Recovery Mud Filtrate	@ °F.		ppm
Mud Pit Sample	@ °F.		
Mud Pit Sample Filtrate	@ °F.		ppm

MUD DATA

Mud Type: - Wt.: -
Viscosity: - Water Loss: - C.C.
Resist. of Mud: - @ - °F; of Filtrate: - @ - °F
Chloride Content: - PPM

RECOVERY DESCRIPTION	FEET	BARRELS	% OIL	% WATER	% OTHERS	API GRAVITY	RESISTIVITY	CHL. PPM
FRESH WATER	388	1.85				@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	

Remarks:

Address: C/O SHALER MOTEL; RIFLE, COLORADO 81650; ATTN: MR. D. B. TAIT

Company: ATLANTIC RICHFIELD COMPANY Field: SORAGUM
Well: FEDERAL S-G-17 Location: SEC.16-3S-96W
Test Interval: 788' TO 808' Test #: 2 Date: 11-9-74

II B-334

County: RIO BLANCO State: COLORADO
Technician: MOUDRY (VERNAL) Test Approved By: MR. D. B. TAIT

Field Report No.: 04362 C
No. Reports Requested: 5

JOHNSTON
...found a better way

PRESSURE DATA

Instrument No.		J-029			
Capacity (P.S.I.G.)		2800			Field Report No. 04362 C
Instrument Depth		771'			
Instrument Opening		INSIDE			
Pressure Gradient P.S.I./Ft.					TIME DATA
Well Temperature °F.		80			
					Time Given / Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel 0.03382 inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
0	14.5		22	143.3		22	109.8	
5	145.0		23	143.3		24	109.8	
10	145.5		24	143.8		26	109.8	
15	146.1		25	143.8		28	109.8	
20	146.7		26	143.8		30	109.8	
25	174.2		27	143.8		32	109.8	
30	147.2		28	143.8		34	109.8	
35	147.2		29	143.8		36	109.8	
40	147.2		30	143.8		38	109.8	
4 45	147.2		50	144.4		40	109.8	
6 0	31.0		70	145.0		42	109.8	
1	48.0		90	145.0		9 44	109.8	
2	65.6		110	145.0		46	88.8	
3	83.7		130	146.1		10 48	88.2	
4	99.0		150	147.2		10 0	88.2	
5	108.7		170	147.2		1	112.6	
6	116 0		190	147.8		2	125.7	
7	122.8		210	147.8		3	130.8	
8	127.9		230	147.8		4	134.2	
9	132.5		7 243	147.8		5	136.5	
10	134.8		7 0	147.8		6	139.3	
11	137.0		8 1	160.8		7	139.9	
12	138.7		2	119.4		8	140.4	
13	139.9		4	110.9		9	141.6	
14	141.0		6	110.4		10	142.1	
15	141.6		8	110.4		11	142.7	
16	142.1		10	110.4		12	144.4	
17	142.1		12	110.4		13	144.4	
18	142.7		14	110.4	II B-335	14	144.4	
19	142.7		16	110.4		15	144.4	
20	142.7		18	109.8		16	144.4	
21	143.3		20	109.8		17	144.4	

JOHNSTON
...found a better way

PRESSURE DATA

Instrument No.		J-029			Field Report No. 04362 C
Capacity (P.S.I.G.)					
Instrument Depth					
Instrument Opening					
Pressure Gradient P.S.I./Ft.					TIME DATA
Well Temperature °F.					
					Time Given / Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
18	144.4		32	214.7			POINTS	
19	144.4		34	224.9		1	150.1	
20	144.4		36	234.6		2	8.8	
25	145.0		38	242.0		3	14.5	
30	145.0		14 40	242.0		4	147.2	
35	145.0		42	233.4		5	150.6	
40	145.0		44	221.0		6	31.0	
45	145.0		46	210.2		7	147.8	
50	145.0		48	201.1		8	160.8	
55	145.0		15 50	194.3		9	109.8	
60	145.0		52	224.4		10	88.2	
65	145.0		54	257.8		11	145.0	
70	145.0		56	279.4		12	172.2	
75	145.0		58	304.9		13	157.4	
80	145.0		60	311.2		14	242.0	
11 83	145.0		62	312.9		15	194.3	
11 0	145.0		64	313.4		15	313.4	
2	154.6		16 66	313.4		17	227.2	
4	160.3		68	290.2		18	146.7	
6	163.7		70	274.9				
8	166.5		72	260.1				
10	168.8		74	247.6				
12	170.5		76	236.3				
14	172.2		17 77	227.2				
12 16	172.2							
18	164.8							
20	160.8							
22	158.0							
13 24	157.4							
26	175.6							
28	190.3							
30	202.3							

II B-336

JOHNSTON
...found a better way

PRESSURE DATA

Instrument No.		J-405			Field Report No. 04362 C
Capacity (P.S.I.G.)		2800			
Instrument Depth		795'			
Instrument Opening		OUTSIDE			
Pressure Gradient P.S.I./Ft.					TIME DATA
Well Temperature °F.		80			
					Time Given / Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel 0.02042 inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
0	28.8		22	156.7		22	123.9	
5	161.3		23	157.3		24	123.9	
10	161.3		24	157.3		26	123.9	
15	161.3		25	157.3		28	123.9	
20	161.3		26	157.3		30	123.3	
25	161.3		27	157.9		32	123.3	
30	161.3		28	157.9		34	123.3	
35	161.3		29	157.9		36	123.3	
40	161.3		30	158.4		38	123.3	
4 45	161.3		50	159.0		40	123.3	
6 0	45.2		70	159.6		42	123.3	
1	63.3		90	159.6		9 44	123.3	
2	79.7		110	159.6		46	105.8	
3	98.4		130	159.6		10 48	103.0	
4	113.1		150	159.6		10 0	103.0	
5	122.8		170	160.1		1	125.6	
6	129.6		190	160.7		2	138.0	
7	136.3		210	160.7		3	143.1	
8	142.0		230	161.3		4	146.5	
9	145.4		7 243	161.3		5	149.4	
10	148.2		7 0	161.3		6	151.6	
11	150.5		8 1	175.4		7	152.8	
12	152.8		2	143.7		8	153.9	
13	153.9		4	127.3		9	154.5	
14	155.0		6	125.6		10	155.6	
15	155.6		8	125.6		11	155.6	
16	155.6		10	125.0		12	156.2	
17	156.2		12	125.0	11 B-337	13	156.7	
18	156.2		14	124.5		14	156.7	
19	156.7		16	124.5		15	156.7	
20	156.7		18	124.5		16	156.7	
21	156.7		20	123.9		17	156.7	

JOHNSTON
...found a better way

PRESSURE DATA

Instrument No.		J-405			Field Report No. 04362 C
Capacity (P.S.I.G.)					
Instrument Depth					
Instrument Opening					
Pressure Gradient P.S.I./Ft.					TIME DATA
Well Temperature °F.					
					Time Given / Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

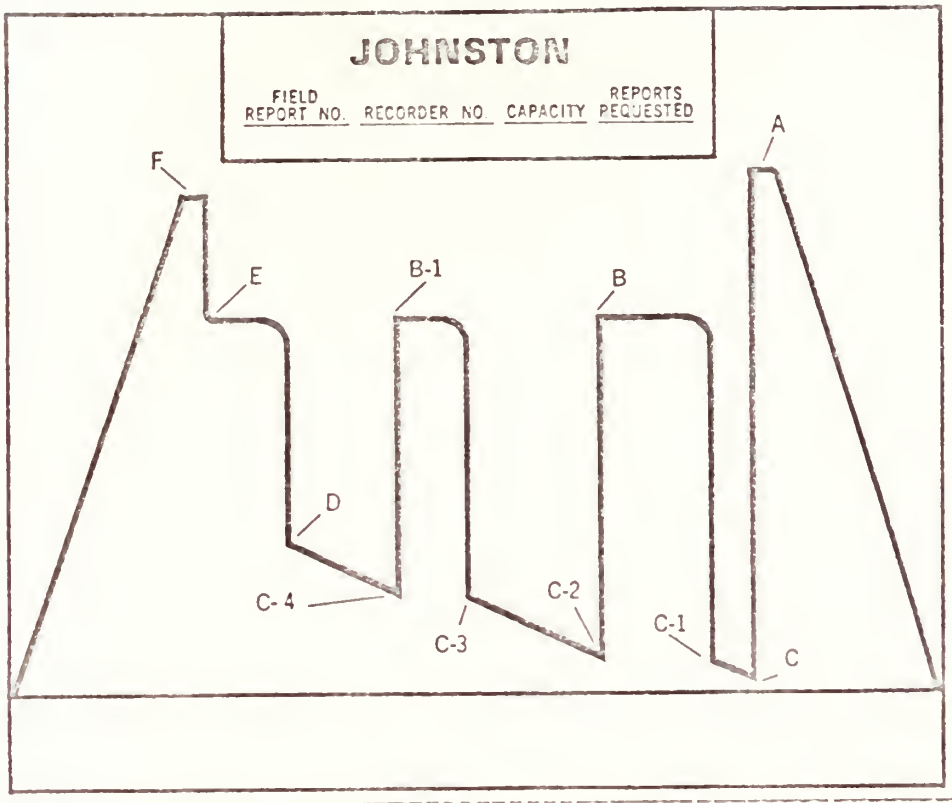
Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
18	156.7		32	220.7			POINTS	
19	156.7		34	231.4		1	165.2	
20	156.7		36	240.5		2	26.0	
25	157.3		38	249.5		3	28.8	
30	157.9		14 40	251.8		4	161.3	
35	158.4		42	240.5		5	165.2	
40	159.0		44	228.6		6	45.2	
45	159.6		46	218.4		7	161.3	
50	159.6		48	209.9		8	175.4	
55	159.6		15 50	206.5		9	123.3	
60	159.6		52	246.7		10	103.0	
65	159.6		54	276.1		11	159.6	
70	159.6		56	296.5		12	185.6	
75	159.6		58	316.3		13	171.4	
80	159.6		60	321.4		14	251.8	
11 83	159.6		62	322.6		15	206.5	
11 0	159.6		64	323.1		16	323.1	
2	167.5		16 66	323.1		17	239.4	
4	173.1		68	297.7		18	157.9	
6	177.1		70	282.9				
8	179.9		72	269.4				
10	182.2		74	257.5				
12	183.9		76	246.7				
14	185.6		17 77	239.4				
12 16	185.6							
18	181.1							
20	176.5							
22	173.1							
13 24	171.4							
26	182.2							
28	196.9							
30	209.4							

II B-338

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

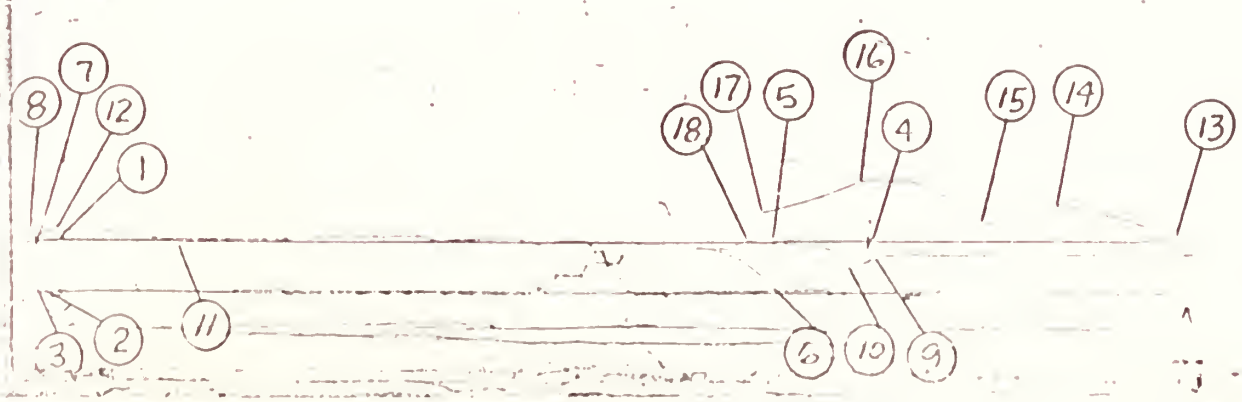
The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.

029

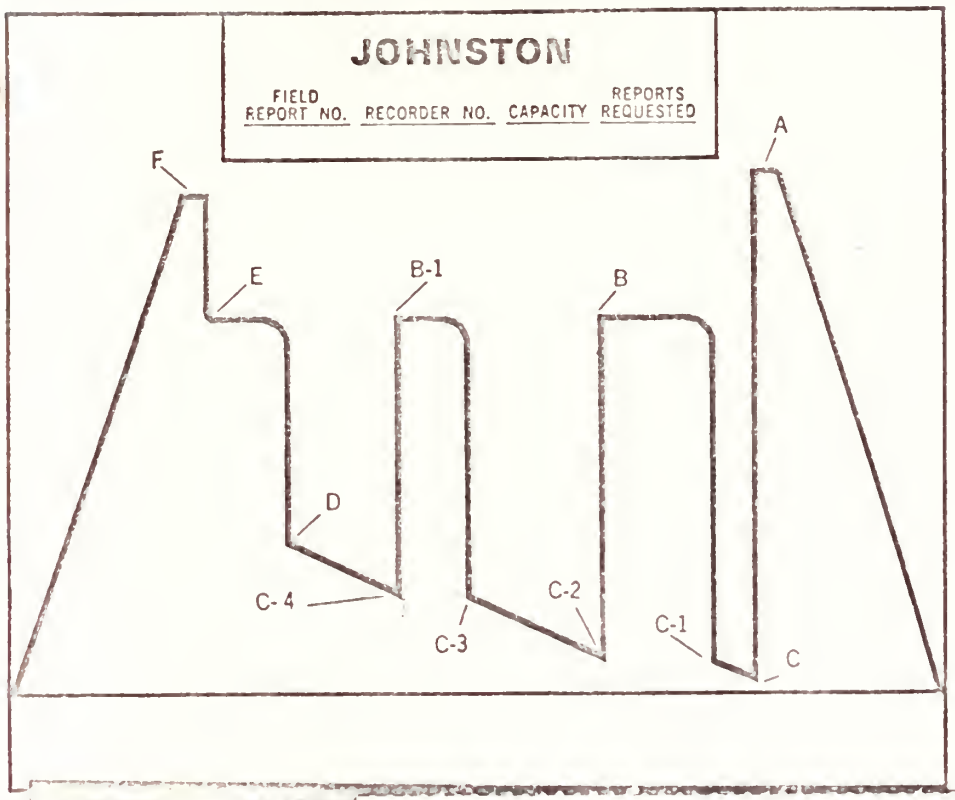
JOHNSTON

FIELD REPORT NO.	RECORDER NO.
04362 C	J-029
CAPACITY	**REPORTS REQUESTED**
2800#	5+



II B-339

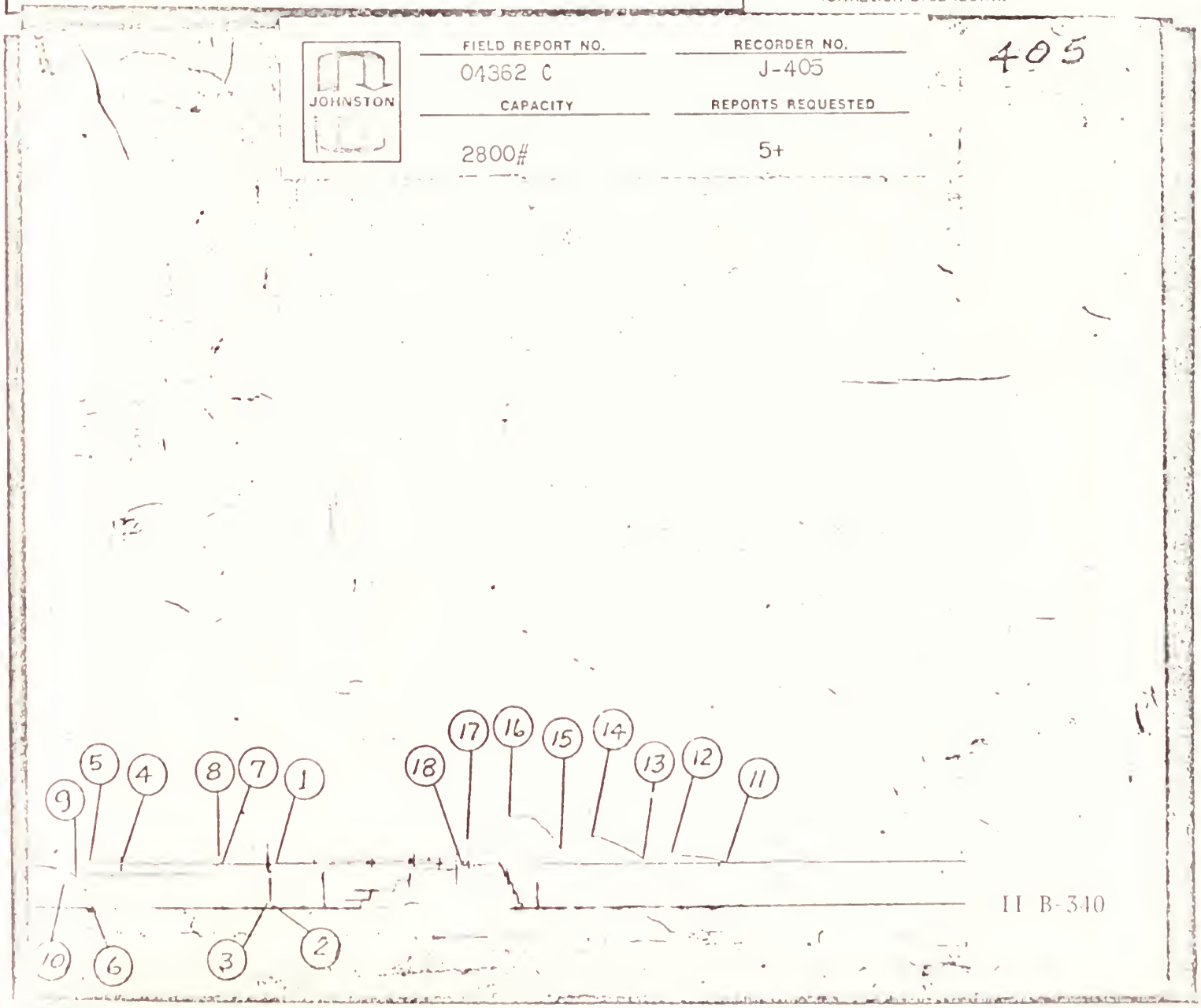
GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.



JOHNSTON

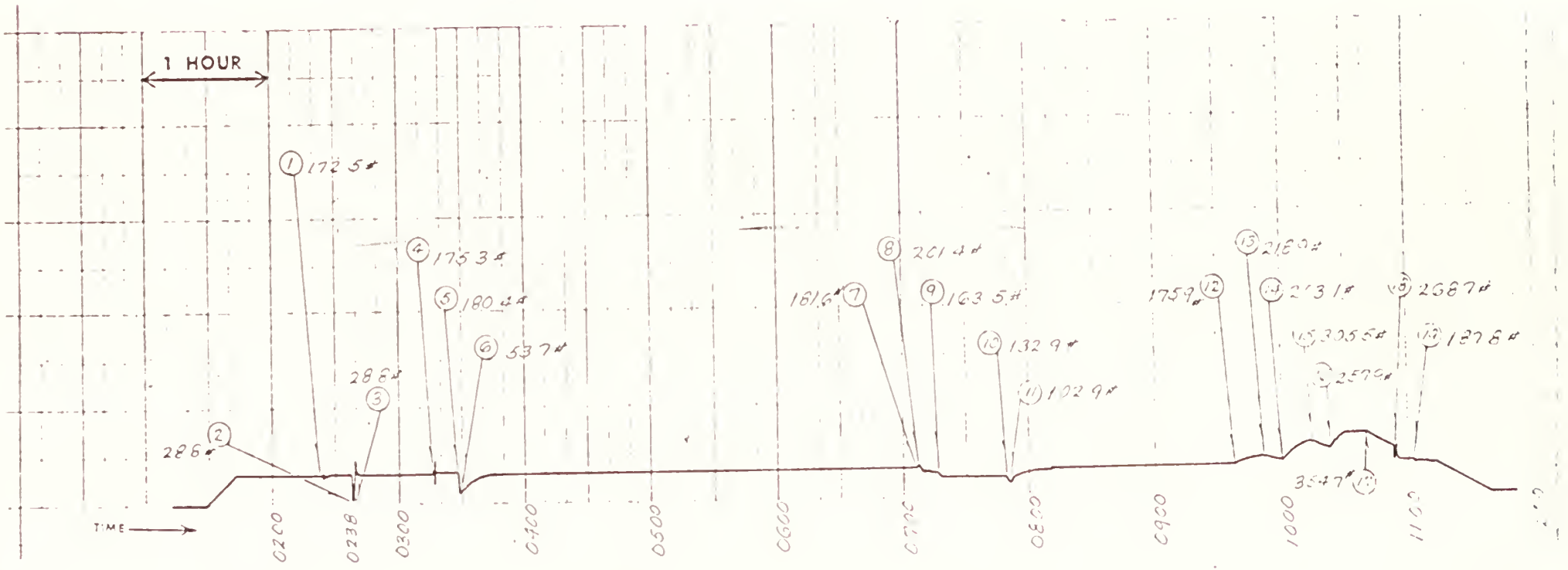
Schlumberger

technical report

II B-341

F.R. # 04363 C

COMPANY ATLANTIC-RICHFIELD CO. WELL FEDERAL S-G -17 TEST NO. 3 COUNTY RIO BLANCO STATE COLORADO



JOHNSTON

PRESSURE LOG*

Field Report No. 04363 C

Instrument: Number J-405

Capacity 2500 p.s.i.

Depth 850 ft.

*a continuous tracing of the original chart

JOHNSTON
...found a better way

SURFACE INFORMATION

Description (Rate of Flow)	Time	Pressure (P.S.I.G.)	Surface Choke
Set Tool	0238	-	-
OPENED FOR INITIAL SHUT-IN	0248	-	-
FINISHED SHUT-IN	0318	-	-
RE-OPENED TOOL	0329	-	-
INJECTED WATER.			
5 GAL/MIN FOR 15 MINUTES			
10 GAL/MIN FOR 15 MINUTES			
20 GAL/MIN FOR 15 MINUTES			
PULLED PACKER LOOSE	1102	-	-

Cushion Type	Amount	Pressure	Bottom Choke
	-		Size 3/4"

MUD DATA

Mud Type - Wt. -
Viscosity - Water Loss - C.C.
Resist. of Mud - @ - °F; of Filtrate - @ - °F
Chloride Content - PPM

EQUIPMENT & HOLE DATA

Type Test M. F. E. OPEN HOLE
Formation Tested PARACHUTE CREEK
Elevation 7036" Ft.
Net Productive Interval - Ft.
Estimated Porosity 20 %
All Depths Measured From GROUND LEVEL
Total Depth 869 Ft.
Main Hole/Casing Size 6 3/4"
Rat Hole/Liner Size -
Drill Collar Length 327' I.D. 2 1/8"
Drill Pipe Length 461' I.D. 2 5/8"
Packer Depth(s) 818' & 822' Ft.

MULTI-FLOW EVALUATOR FLUID SAMPLE DATA

Sampler Pressure ____ P.S.I.G. at Surface
Recovery: Cu. Ft. Gas ____
cc. Oil ____
cc. Water ____
cc. Mud ____
Tot. Liquid cc. ____
Gravity ____ °API @ ____ °F.
Gas/Oil Ratio ____ cu. ft./bbl.

		RESISTIVITY	CHLORIDE CONTENT
Recovery Water	@ °F.		ppm
Recovery Mud	@ °F.		
Recovery Mud Filtrate	@ °F.		ppm
Mud Pit Sample	@ °F.		
Mud Pit Sample Filtrate	@ °F.		ppm

RECOVERY DESCRIPTION	FEET	BARRELS	% OIL	% WATER	% OTHERS	API GRAVITY	RESISTIVITY	CHL. PPM
WATER	600	3.27				@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	

Remarks

Company SHALER MOTEL; RIFLE, COLORADO 81650; ATTN: MR. D. B. TAIT

Operator ATLANTIC-RICHFIELD COMPANY
Field SORAGUM
Lease FEDERAL S-G-17
Location SEC. 16-3S-96W
Interval 822' TO 869'
Test # 3
Date 11-11-74

II B-343

County RIO BLANCO State COLORADO
Field Report No. 04363 C
MOUDRY (VERNAL) Test Approved By MR. L. M. POWERS
No. Reports Requested 5

JOHNSTON
...found a better way

PRESSURE DATA

Instrument No.		J-029			
Capacity (P.S.I.G.)		2800			Field Report No. 04363 C
Instrument Depth		805'			
Instrument Opening		INSIDE			
Pressure Gradient P.S.I./Ft.					TIME DATA
Well Temperature °F.		82			
					Time Given / Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
3 0	19.0		18	142.6		90	154.0	
3	152.9		19	143.3		95	154.6	
6	152.9		20	144.9		100	155.7	
9	152.9		21	145.5		105	158.0	
12	152.9		22	146.0		110	158.0	
15	152.9		23	146.6		115	158.0	
18	152.9		24	147.2		120	158.0	
21	152.9		25	147.8		125	158.5	
24	152.9		26	148.3		130	158.5	
27	152.9		27	148.9		135	159.1	
30	152.9		28	149.5		140	159.1	
33	152.9		29	149.5		145	159.7	
36	152.9		30	150.0		150	159.7	
4 38	152.9		31	150.0		155	159.7	
6 0	30.9		32	150.6		160	159.7	
1	42.3		33	150.6		165	159.7	
2	54.8		34	151.2		170	159.7	
3	66.1		35	151.2		175	159.7	
4	78.6		36	151.2		180	159.7	
5	90.5		37	151.2		185	159.7	
6	99.6		38	151.7		190	159.7	
7	106.9		39	151.7		195	159.7	
8	112.6		40	151.7		200	159.7	
9	117.7		45	152.3		205	159.7	
10	122.8		50	152.9		210	159.7	
11	126.8		55	152.9		215	159.7	
12	130.7		60	153.4		7 216	159.7	
13	133.6		65	153.4		8 1	180.6	
14	136.4		70	153.4	H B-344	2	146.6	
15	138.7		75	153.4		4	145.5	
16	140.4		80	154.0		6	145.5	
17	141.5		85	154.0		8	141.5	

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PRESSURE DATA

Instrument No.		J-029 CONTINUED			
Capacity (P.S.I.G.)				Field Report No.	04363 C
Instrument Depth					
Instrument Opening					
Pressure Gradient P.S.I./Ft.				TIME DATA	
Well Temperature °F.					
				Time Given	Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B			Mins.	Mins.
Initial Flow	C			Mins.	Mins.
				Mins.	Mins.
				Mins.	Mins.
Final Flow	D			Mins.	Mins.
Final Shut-in	E			Mins.	Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
10	140.9		14	149.5		90	156.3	
12	111.5		15	149.5		95	156.8	
14	110.9		16	149.5		100	156.8	
16	110.9		17	149.5		105	156.8	
18	110.9		18	149.5		12 107	156.8	
20	110.9		19	150.0		2	169.3	
22	110.9		20	152.3		4	177.2	
24	110.9		21	152.3		6	189.6	
26	110.9		22	152.3		8	191.4	
28	110.9		23	152.3		10	196.5	
30	110.9		24	152.3		12	199.3	
32	110.9		25	152.3		13 14	199.3	
34	110.9		26	155.1		16	192.0	
36	110.9		27	155.1		18	186.9	
38	110.9		28	155.1		20	182.9	
40	110.9		29	155.1		14 22	181.2	
42	110.9		30	155.1		24	204.5	
44	110.9		31	155.1		26	222.0	
46	80.8		32	155.1		28	237.3	
1	103.5		33	155.1		30	250.4	
2	112.0		34	155.1		32	263.4	
3	118.3		35	155.1		34	275.3	
4	124.5		40	155.1		36	285.5	
5	129.0		45	155.1		15 37	285.5	
6	133.0		50	155.7		38	278.7	
7	136.4		55	155.7		40	266.3	
8	139.2		60	155.7		42	254.3	
9	141.5		65	156.3	II B-545	44	244.7	
10	143.2		70	156.3		46	237.3	
11	144.3		75	156.3		16 47	237.3	
12	144.9		80	156.3		48	274.2	
13	147.8		85	156.3		50	299.7	

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PRESSURE DATA

J-029 CONTINUED

Field Report No. 04363 C

Ft.

TIME DATA

		Time Given	Time Computed
A			
B		Mins.	Mins.
C		Mins.	Mins.
		Mins.	Mins.
		Mins.	Mins.
D		Mins.	Mins.
E		Mins.	Mins.
Mud F			

d not reach static reservoir pressure. Clock Travel _____ inches per min.

PRESSURE INCREMENTS

ssure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
.2		POINTS					
.2		1	149.5				
.7		2	6.0				
.9		3	19.0				
.6		4	152.9				
.6		5	158.0				
.9		6	30.9				
.7		7	159.7				
7.2		8	180.6				
.3		9	140.9				
.0		10	110.9				
.3		11	80.8				
47.0		12	156.8				
.7		13	199.3				
7.0		14	181.2				
.5		15	285.5				
.9		16	237.3				
.9		17	336.6				
		18	247.0				
		19	165.9				

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PRESSURE DATA

Instrument No.	J-405			
Capacity (P.S.I.G.)	2800			
Instrument Depth	850'			
Instrument Opening	OUTSIDE			
Pressure Gradient P.S.I./Ft.				
Well Temperature °F.	82			
Initial Hydrostatic Mud A				
Initial Shut-in B				
Initial Flow C				
Final Flow D				
Final Shut-in E				
Final Hydrostatic Mud F				

Field Report No. 04363 C

TIME DATA

Time Given	Time Computed
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
0	28.3		18	164.6		90	174.8	
3	175.3		19	165.2		95	174.8	
6	175.3		20	166.3		100	175.3	
9	175.3		21	166.9		105	175.3	
12	175.3		22	167.4		110	175.3	
15	175.3		23	168.6		115	175.3	
18	175.3		24	169.1		120	175.9	
21	175.3		25	169.7		125	175.9	
24	175.3		26	169.7		130	175.9	
27	175.3		27	170.2		135	175.9	
30	175.3		28	170.2		140	176.5	
33	175.3		29	170.8		145	176.5	
36	175.3		30	171.4		150	176.5	
4 38	175.3		31	171.4		155	177.0	
6 0	53.7		32	171.4		160	177.0	
1	75.8		33	171.4		165	177.0	
2	86.5		34	171.9		170	177.0	
3	99.0		35	171.9		175	177.6	
4	111.4		36	172.5		180	177.6	
5	120.5		37	172.5		185	179.3	
6	127.2		38	172.5		190	179.9	
7	132.9		39	172.5		195	181.6	
8	138.6		40	172.5		200	181.6	
9	143.7		45	173.1		205	181.6	
10	148.2		50	173.6		210	181.6	
11	[illegible]		55	174.2		215	181.6	
12	[illegible]		60	174.2		7 216	181.6	
13	[illegible]		65	174.2	H B-547	8 1	201.4	
14	[illegible]		70	174.2		2	169.7	
15	[illegible]		75	174.2		4	168.0	
16	[illegible]		80	174.2		6	168.0	
17	[illegible]		85	174.8		8	164.0	

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PRESSURE DATA

Instrument No.	J-405 CONTINUED			
Capacity (P.S.I.G.)				Field Report No. 04363 C
Instrument Depth				
Instrument Opening				
Pressure Gradient P.S.I./Ft.				TIME DATA
Well Temperature °F.				
				Time Given / Time Computed
Initial Hydrostatic Mud A				
Initial Shut-in B				Mins. / Mins.
Initial Flow C				Mins. / Mins.
				Mins. / Mins.
				Mins. / Mins.
Final Flow D				Mins. / Mins.
Final Shut-in E				Mins. / Mins.
Final Hydrostatic Mud F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
10	163.5		14	168.0		90	175.3	
12	133.5		15	168.6*		95	175.3	
14	132.9		16	170.2		100	175.9	
16	132.9		17	170.2		105	175.9	
18	132.9		18	170.2		12 107	175.9	
20	133.5		19	170.8		2	187.2	
22	133.5		20	171.4		4	196.3	
24	133.5		21	175.3		6	203.6	
26	133.5		22	175.3		8	209.9	
28	133.5		23	175.3		10	215.5	
30	133.5		24	175.3		12	218.9	
32	133.5		25	175.3		13 14	218.9	
34	133.5		26	175.3		16	214.9	
36	132.9		27	175.3		18	209.9	
38	132.9		28	175.3		20	205.3	
40	132.9		29	175.3		14 22	203.1	
42	132.9		30	175.3		24	224.0	
10 44	132.9		31	175.3		26	241.5	
11 46	102.9		32	175.3		28	257.4	
1	125.0		33	175.3		30	271.5	
2	132.9		34	175.3		32	284.0	
3	139.7		35	175.3		34	295.3	
4	145.4		40	175.3		36	305.5	
5	150.4		45	175.3		15 37	305.5	
6	154.4		50	175.3		38	300.4	
7	157.2		55	175.3		40	288.5	
8	160.1		60	175.3		42	276.6	
9	162.3		65	175.3		44	266.4	
10	164.0		70	175.3		46	257.9	
11	164.6		75	175.3		16 47	257.9	
12	165.7		80	175.3		48	237.9	
13	166.8		85	175.3		50	315.1	

II B-348

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PRESSURE DATA

Instrument No.		J-405 CONTINUED			
Capacity (P.S.I.G.)					Field Report No. 04363 C
Instrument Depth					
Instrument Opening					
Pressure Gradient P.S.I./Ft.					TIME DATA
Well Temperature °F.					
					Time Given / Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
52	340.6		POINTS					
54	351.3		1	172.5				
56	532.4		2	28.8				
58	353.6		3	28.8				
60	354.7		4	175.3				
17 62	354.7		5	180.4				
64	336.6		6	53.7				
66	322.4		7	181.6				
68	308.9		8	201.4				
70	297.0		9	163.5				
72	286.2		10	132.9				
74	276.1		11	102.9				
18 76	268.7		12	175.9				
78	190.1		13	218.9				
80	188.9		14	203.1				
82	188.4		15	305.5				
84	187.8		16	257.9				
19 85	187.8		17	354.7				
			18	268.7				
			19	119.8				

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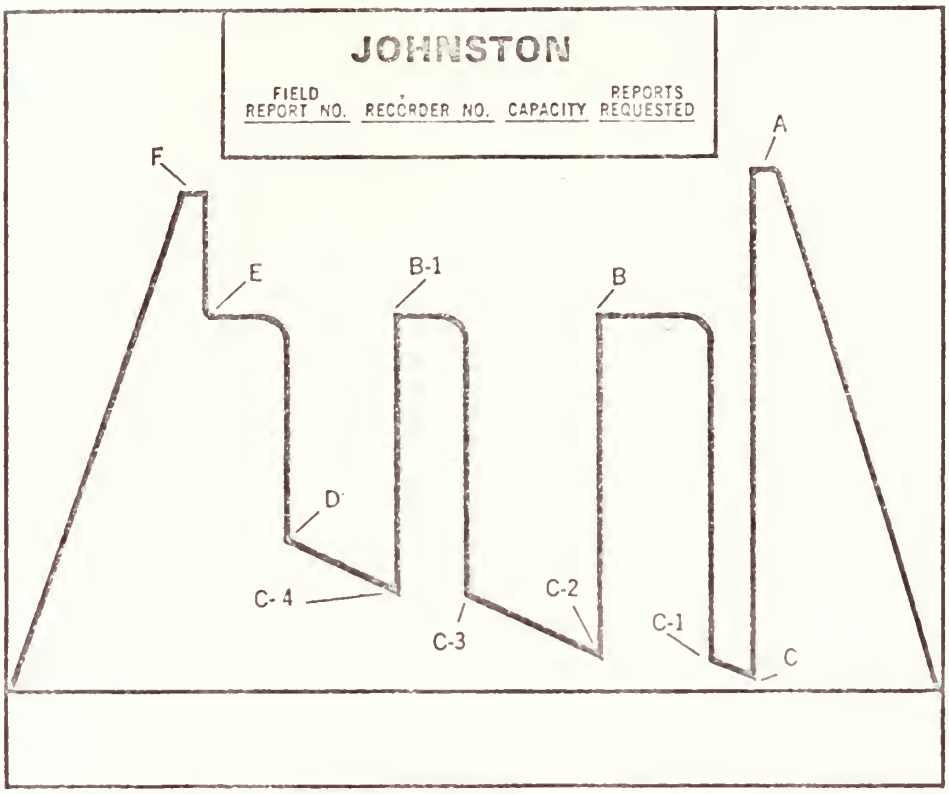
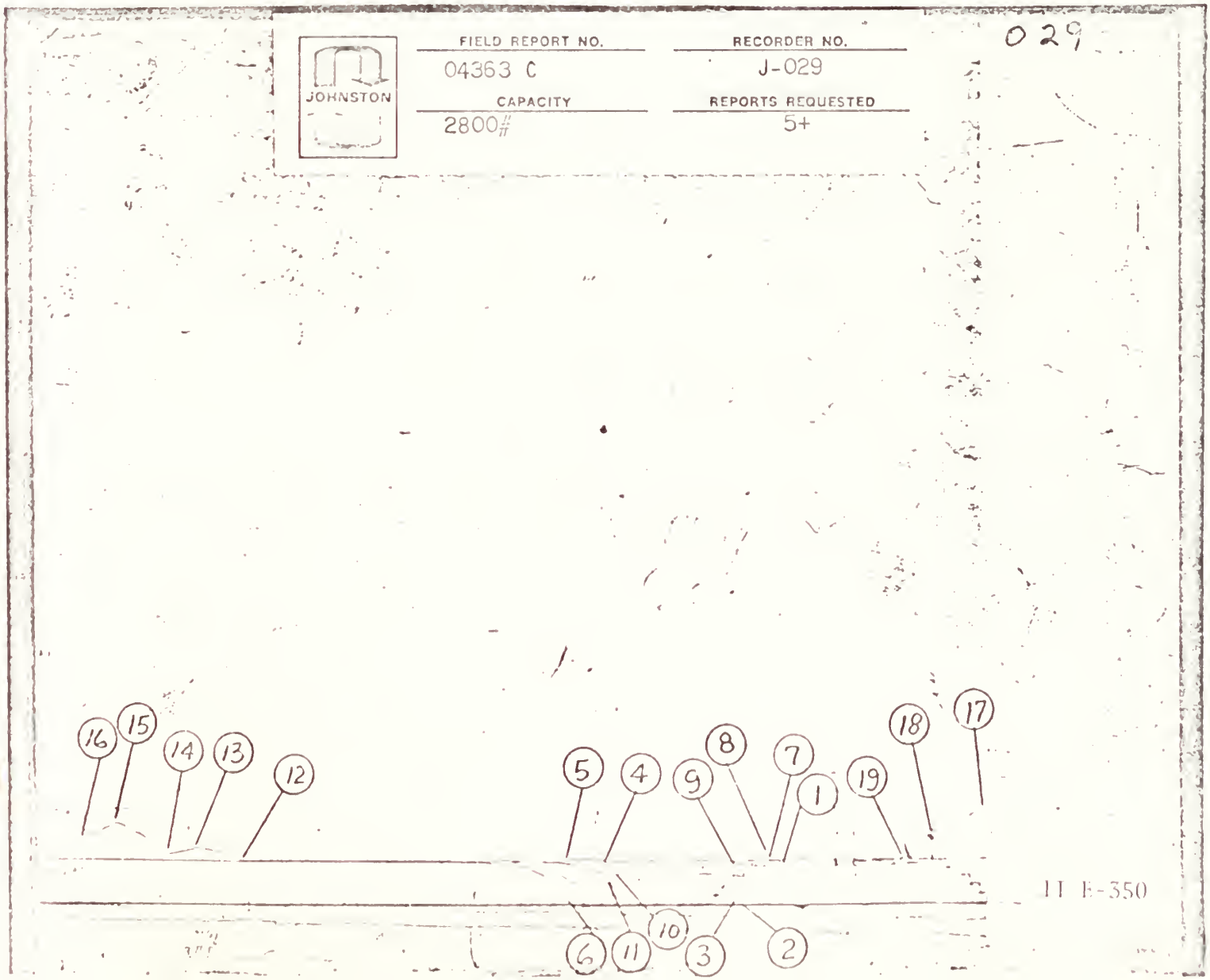
GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



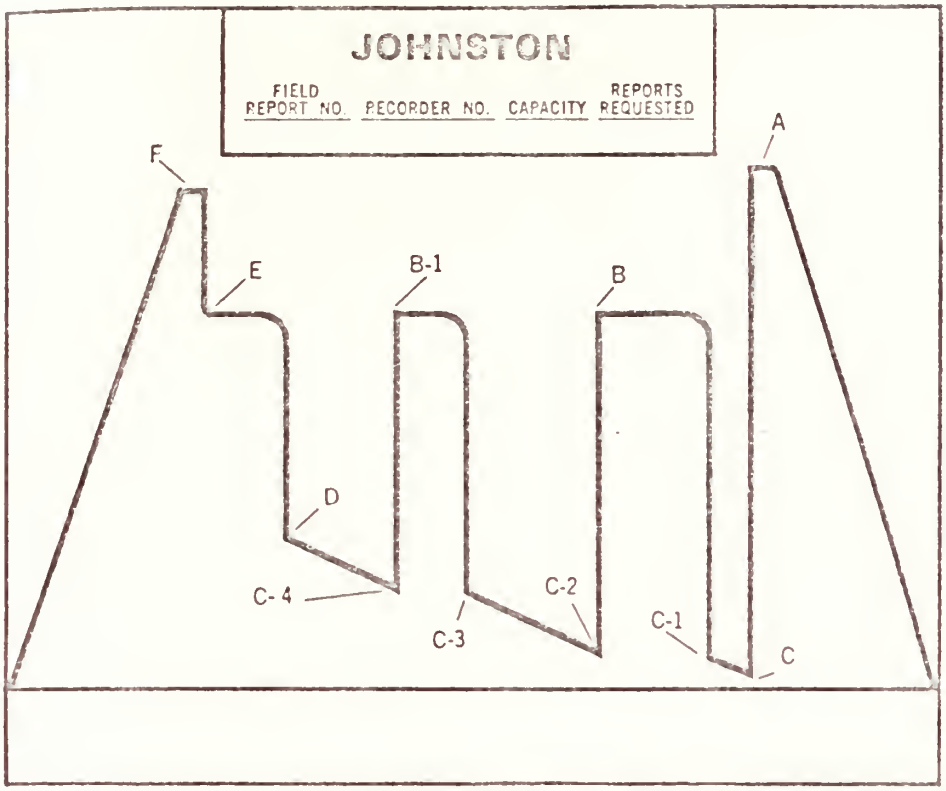
A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.



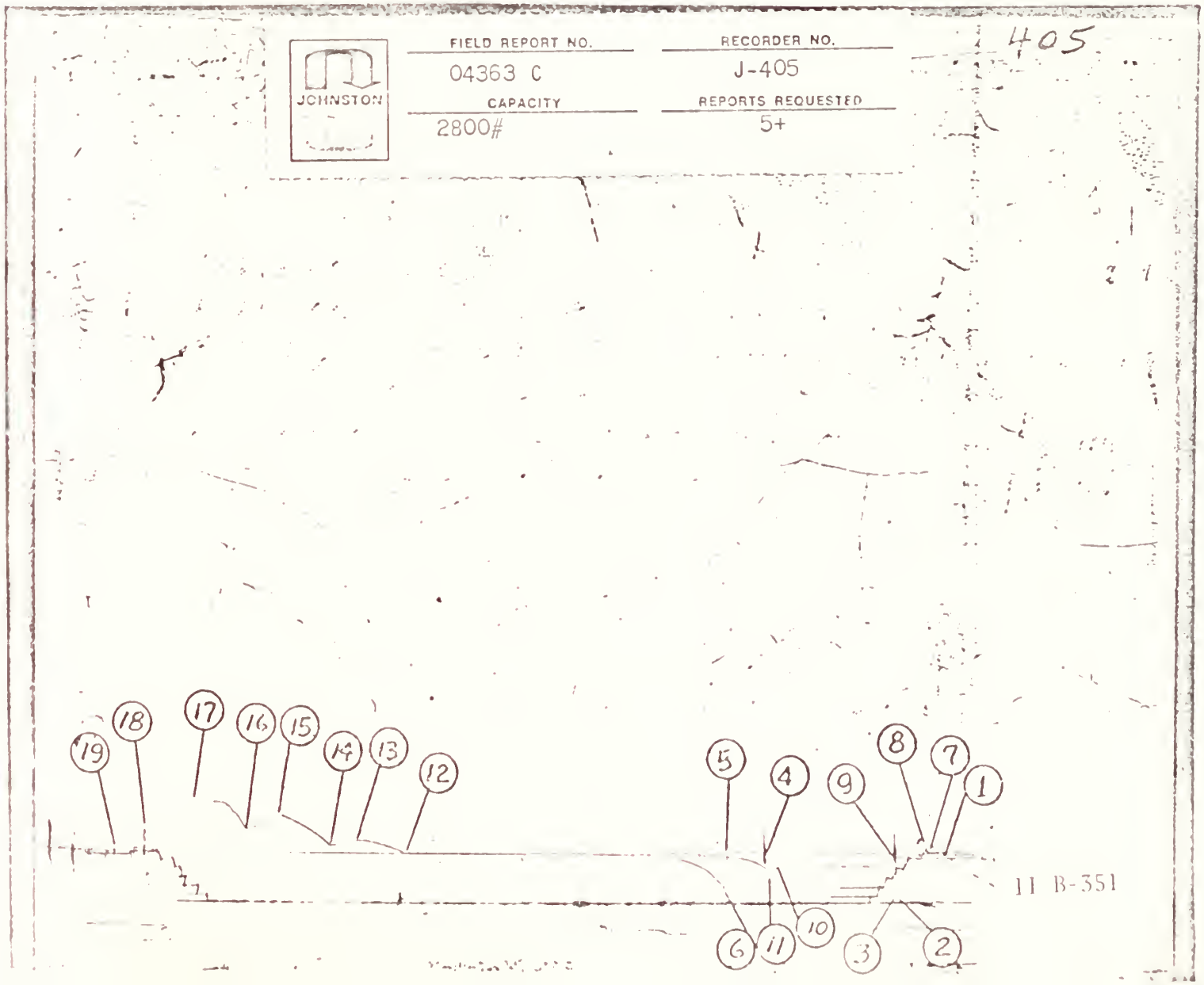
GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.



JOHNSTON

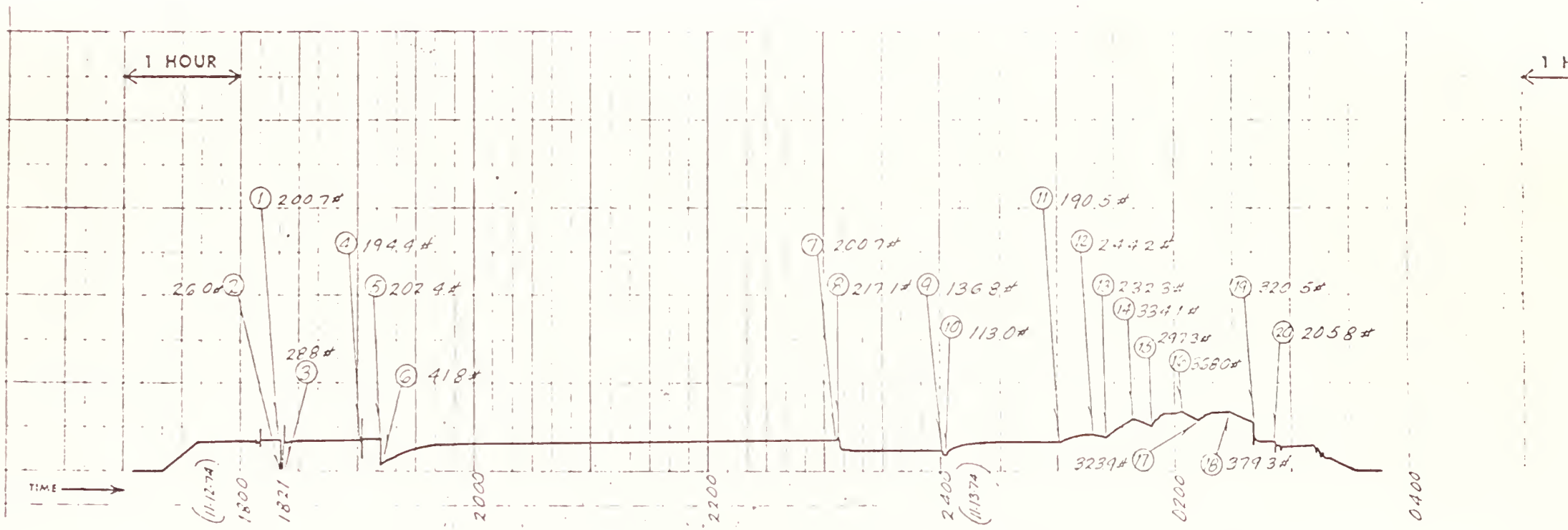
Schlumberger

technical report

II B-352

F.R. #04364 C

COMPANY ATLANTIC RICHFIELD COMPANY WELL FEDERAL S-G #17 TEST NO. 4 COUNTY RIO BLANCO STATE COLORADO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1 HOUR
1 2007#
2 260#
3 288#
4 1949#
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8 2171#
9 1368#
10 1130#
11 1905#
12 2442#
13 2323#
14 3341#
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17 3239#
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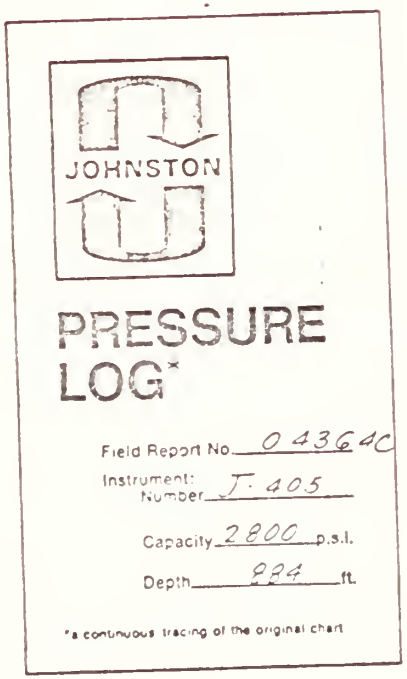
0400


JOHNSTON
PRESSURE LOG*
Field Report No. 04364C
Instrument: Number J-405
Capacity 2800 p.s.i.
Depth 884 ft.
*a continuous tracing of the original chart

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SURFACE INFORMATION

Description (Rate of Flow)		Time	Pressure (P.S.I.G.)	Surface Choke
Opened Tool		1821	-	-
LIGHT BLOW (11-12-74)				
CLOSED FOR INITIAL SHUT-IN		1829	-	-
FINISHED SHUT-IN		1859	-	-
RE-OPENED TOOL		1911	-	-
LIGHT BLOW				
JETTED WATER	FROM	2322	-	-
(11-13-74)	TO	0022	-	-
WATER INJECTION				
5 GAL/MIN FOR 15 MIN.	FROM	0107	-	-
	TO	0122	-	-
10 MINUTE DECLINE				
10 GAL/MIN FOR 15 MIN.	FROM	0133	-	-
	TO	0148	-	-
10 MINUTE DECLINE				
20 GAL/MIN FOR 15 MIN.	FROM	0158	-	-
	TO	0213	-	-
10 MINUTE DECLINE				
20 GAL/MIN FOR 6 MIN., CUT BACK TO 10 GAL/MIN FOR 9 MINUTES	FROM	0223	-	-
	TO	0238	-	-
10 MINUTE DECLINE				
PULLED PACKER LOOSE		0251	-	-

Cushion Type	Amount	Pressure	Bottom Choke
	-		Size 3/4"

MUD DATA

Mud Type - Wt. -
Viscosity - Water Loss - C.C.
Resist: of Mud - @ - °F; of Filtrate - @ - °F
Chloride Content - PPM

EQUIPMENT & HOLE DATA

Type Test M.F.E. OPEN HOLE
Formation Tested PARACHUTE CREEK
Elevation 7036 Ft.
Net Productive Interval - Ft.
Estimated Porosity 20 %
All Depths Measured From GROUND LEVEL
Total Depth 919 Ft.
Main Hole/Casing Size 6 3/4"
Rat Hole/Liner Size -
Drill Collar Length 327' I.D. 2 1/8"
Drill Pipe Length 506' I.D. 2 5/8"
Packer Depth(s) 863 & 866 Ft.

MULTI-FLOW EVALUATOR FLUID SAMPLE DATA

Sampler Pressure ____ P.S.I.G. at Surface
Recovery: Cu. Ft. Gas ____
cc. Oil ____
cc. Water ____
cc. Mud ____
Tot. Liquid cc. ____
Gravity ____ °API @ ____ °F.
Gas/Oil Ratio ____ cu. ft./bbl.

		RESISTIVITY	CHLORIDE CONTENT
Recovery Water	@ °F.		ppm
Recovery Mud	@ °F.		
Recovery Mud Filtrate	@ °F.		ppm
Mud Pit Sample	@ °F.		
Mud Pit Sample Filtrate	@ °F.		ppm

RECOVERY DESCRIPTION	FEET	BARRELS	% OIL	% WATER	% OTHERS	API GRAVITY	RESISTIVITY	CHL. PPM
WATER	374.1	1.75				@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	

Remarks:

Address 1500 SECURITY LIFE BUILDING; 1616 GLENARM; DENVER, COLORADO 80202

Company ATLANTIC RICHFIELD COMPANY Field SORAGUM GULCH
Well FEDERAL S-G #17 Location SEC. 16-3S-96W
Test Interval 866' TO 919' II B-354 Test # 4 Date 11-12-74

County RIO BLANCO State COLORADO
Technician MOUDRY (VERNAL) Test Approved By MR. JERRY L. BUSSELL

Field Report No. 04364 C
No. Reports Requested 14 (13xs)

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PRESSURE DATA

Instrument No.	J-029			
Capacity (P.S.I.G.)	2800			Field Report No. 04364 C
Instrument Depth	850'			
Instrument Opening	INSIDE			
Pressure Gradient P.S.I./Ft.				TIME DATA
Well Temperature °F.	86			

		Time Given	Time Computed
Initial Hydrostatic Mud	A		
Initial Shut-in	B	Mins.	Mins.
Initial Flow	C	Mins.	Mins.
		Mins.	Mins.
		Mins.	Mins.
Final Flow	D	Mins.	Mins.
Final Shut-in	E	Mins.	Mins.
Final Hydrostatic Mud	F		

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

POINTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
1	183.9		3 0	11.7		16	131.2	
2	10.0		3	176.5		17	135.2	
3	11.7		6	177.7		18	138.6	
4	178.8		9	177.7		19	141.4	
5	183.9		12	177.7		20	144.3	
6	22.4		15	177.7		21	146.5	
7	183.9		18	177.7		22	149.3	
8	199.8		21	178.2		23	151.6	
9	118.8		24	178.2		24	152.7	
10	96.1		27	178.8		25	154.4	
11	176.5		30	178.8		26	155.0	
12	229.2		33	178.8		27	156.1	
13	215.1		36	178.8		28	157.3	
14	318.8		4 39	178.8		29	159.0	
15	280.8					30	160.1	
16	352.8		6 0	22.4		31	160.7	
17	308.0		1	29.8		32	161.8	
18	364.7		2	40.6		33	162.4	
19	304.0		3	50.2		34	163.5	
20	187.9		4	59.3		35	164.1	
			5	66.6		36	165.2	
			6	74.0		37	165.8	
			7	81.4		38	166.3	
			8	88.7		39	166.9	
			9	97.2		40	167.5	
			10	103.5		41	168.0	
			11	109.7		42	168.6	
			12	114.8	II B-355	43	169.2	
			13	119.3		44	169.7	
			14	123.3		45	170.3	
			15	127.3		46	170.3	
			CONTINUED			CONTINUED		

JOHNSTON
...found a better way

PRESSURE DATA

Instrument No.	J-029			
Capacity (P.S.I.G.)				
Instrument Depth				
Instrument Opening				
Pressure Gradient P.S.I./Ft.				
Well Temperature °F.				
Initial Hydrostatic Mud A				
Initial Shut-in B				
Initial Flow C				
Final Flow D				
Final Shut-in E				
Final Hydrostatic Mud F				

Field Report No. 04364 C

TIME DATA

Time Given	Time Computed
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
47	170.9		8 1	199.8		1	113.1	
48	171.4		2	137.5		2	119.3	
49	171.4		4	123.9		3	124.4	
50	172.0		6	122.2		4	129.5	
51	172.6		8	119.3		5	132.4	
52	172.6		10	119.3		6	136.9	
53	173.1		12	119.3		7	140.9	
54	173.1		14	119.3		8	144.3	
55	173.7		16	118.8		9.	146.5	
56	173.7		18	118.8		10	148.8	
57	173.7		20	118.8		11	150.5	
58	174.3		22	118.8		12	152.7	
59	174.8		24	118.8		13	153.9	
60	174.8		26	118.8		14	155.0	
70	176.0		28	118.8		15	155.6	
80	176.5		30	118.8		16	156.1	
90	177.1		32	118.2		17	157.3	
100	177.1		34	118.2		18	158.4	
110	177.1		36	118.2		19	159.0	
120	177.1		38	118.8		20	160.1	
130	177.1		40	118.8		21	160.7	
140	177.1		42	118.8		22	161.8	
150	177.1		44	118.8		23	162.9	
160	177.1		46	118.8		24	164.1	
170	177.7		48	118.8		25	164.6	
180	177.7		50	118.8		26	165.2	
190	178.8		52	118.8	II B-356	27	166.3	
200	179.9		54	118.8		28	166.9	
210	182.2	9	55	118.8		29	167.5	
220	183.9		56	96.1		30	168.0	
230	183.9	10	58	96.1		31	169.2	
235	183.9		CONTINUED			CONTINUED		

JOHNSTON
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PRESSURE DATA

Instrument No.	J-029			
Capacity (P.S.I.G.)				
Instrument Depth				
Instrument Opening				
Pressure Gradient P.S.I./Ft.				
Well Temperature °F.				
Initial Hydrostatic Mud A				
Initial Shut-in B				
Initial Flow C				
Final Flow D				
Final Shut-in E				
Final Hydrostatic Mud F				

Field Report No. 04364 C

TIME DATA

Time Given	Time Computed
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
32	170.3		42	304.6				
33	170.9		44	295.5				
34	170.9		46	287.0				
35	170.9		15 48	280.8				
40	172.6		50	314.8				
45	174.3		52	343.1				
50	175.4		54	350.5				
55	176.5		56	350.5				
11 57	176.5		58	350.5				
2	187.9		60	350.5				
4	196.9		62	352.8				
6	204.9		16 63	352.8				
8	213.4		64	350.5				
10	219.6		66	339.2				
12	225.3		68	328.4				
14	229.2		70	318.2				
16	229.2		17 72	308.0				
12 17	229.2		74	327.8				
18	226.4		76	349.9				
20	221.9		78	359.6				
22	217.9		80	360.7				
13 24	215.1		82	362.4				
26	230.9		84	363.5				
28	248.5		86	364.7				
30	266.1		18 87	364.7				
32	281.4		88	363.5				
34	295.0		90	353.9				
36	308.0		92	342.0				
38	318.8		94	331.2				
14 39	318.8		96	321.0				
40	314.8		98	312.0				
CONTINUED			19 99	304.0				

II B-357

JOHNSTON ...found a better way

PRESSURE DATA

Instrument No.		J-405			
Capacity (P.S.I.G.)		2800			Field Report No. 04364 C
Instrument Depth		884'			
Instrument Opening		OUTSIDE			
Pressure Gradient P.S.I./Ft.					TIME DATA
Well Temperature °F.		86			
					Time Given / Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

POINTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
1	200.7		3 0	28.8		16	147.5	
2	26.0		3	192.7		17	151.5	
3	28.8		6	193.9		18	154.9	
4	194.4		9	194.4		19	157.7	
5	202.4		12	194.4		20	160.5	
6	41.8		15	194.4		21	162.8	
7	200.7		18	194.4		22	165.6	
8	217.1		21	194.4		23	167.3	
9	136.8		24	194.4		24	169.0	
10	113.0		27	194.4		25	170.1	
11	190.5		30	194.4		26	171.3	
12	244.2		33	194.4		27	172.4	
13	232.3		36	194.4		28	173.5	
14	334.1		4 39	194.4		29	174.7	
15	297.3					30	175.8	
16	368.0		6 0	41.8		31	176.4	
17	323.9		1	46.9		32	177.5	
18	379.3		2	58.2		33	178.0	
19	320.5		3	68.4		34	178.6	
20	205.8		4	76.8		35	179.7	
			5	84.2		36	180.3	
			6	90.4		37	180.9	
			7	98.3		38	181.4	
			8	105.7		39	182.0	
			9	113.6		40	182.6	
			10	120.4		41	182.6	
			11	126.6	II B-358	42	183.1	
			12	131.7		43	183.7	
			13	135.6		44	183.7	
			14	139.6		45	184.3	
			15	143.6		46	184.3	
			CONTINUED			CONTINUED		

JOHNSTON
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PRESSURE DATA

Instrument No.		J-405			
Capacity (P.S.I.G.)					Field Report No. 04364 C
Instrument Depth					
Instrument Opening					
Pressure Gradient P.S.I./Ft.					TIME DATA
Well Temperature °F.					
					Time Given / Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
47	184.8		8 1	217.1		1	130.0	
48	184.8		2	160.0		2	136.2	
49	185.4		4	142.4		3	141.3	
50	186.0		6	140.7		4	145.3	
51	186.5		8	137.9		5	149.2	
52	186.5		10	137.9		6	153.7	
53	187.1		12	137.9		7	157.1	
54	187.1		14	137.3		8	160.0	
55	187.7		16	136.8		9	162.2	
56	188.2		18	137.3		10	163.9	
57	188.8		20	137.3		11	166.7	
58	188.8		22	137.3		12	167.9	
59	189.4		24	137.3		13	169.0	
60	189.4		26	137.3		14	170.1	
70	191.1		28	136.8		15	170.7	
80	191.1		30	136.8		16	171.8	
90	192.2		32	136.8		17	172.4	
100	192.2		34	136.8		18	173.0	
110	192.2		36	136.8		19	174.1	
120	192.2		38	136.8		20	174.7	
130	192.2		40	136.8		21	175.8	
140	192.2		42	136.8		22	176.4	
150	192.2		44	136.8		23	177.5	
160	192.2		46	136.8		24	178.0	
170	192.2		48	136.8		25	178.6	
180	192.7		50	136.8		26	179.7	
190	193.9		52	136.8	H B-359	27	180.3	
200	195.0		54	136.8		28	180.9	
210	197.3		9 55	136.8		29	181.4	
220	199.5		56	113.6		30	182.0	
230	200.7		10 58	113.0		31	182.6	
235	200.7		CONTINUED			CONTINUED		

JOHNSTON
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PRESSURE DATA

Instrument No.	J-405			
Capacity (P.S.I.G.)				
Instrument Depth				
Instrument Opening				
Pressure Gradient P.S.I./Ft.				
Well Temperature °F.				
Initial Hydrostatic Mud A				
Initial Shut-in B				
Initial Flow C				
Final Flow D				
Final Shut-in E				
Final Hydrostatic Mud F				

Field Report No. 04364 C

TIME DATA

Time Given	Time Computed
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.*
Mins.	Mins.
Mins.	Mins.

Remarks:

*Shut in pressure did not reach static reservoir pressure.

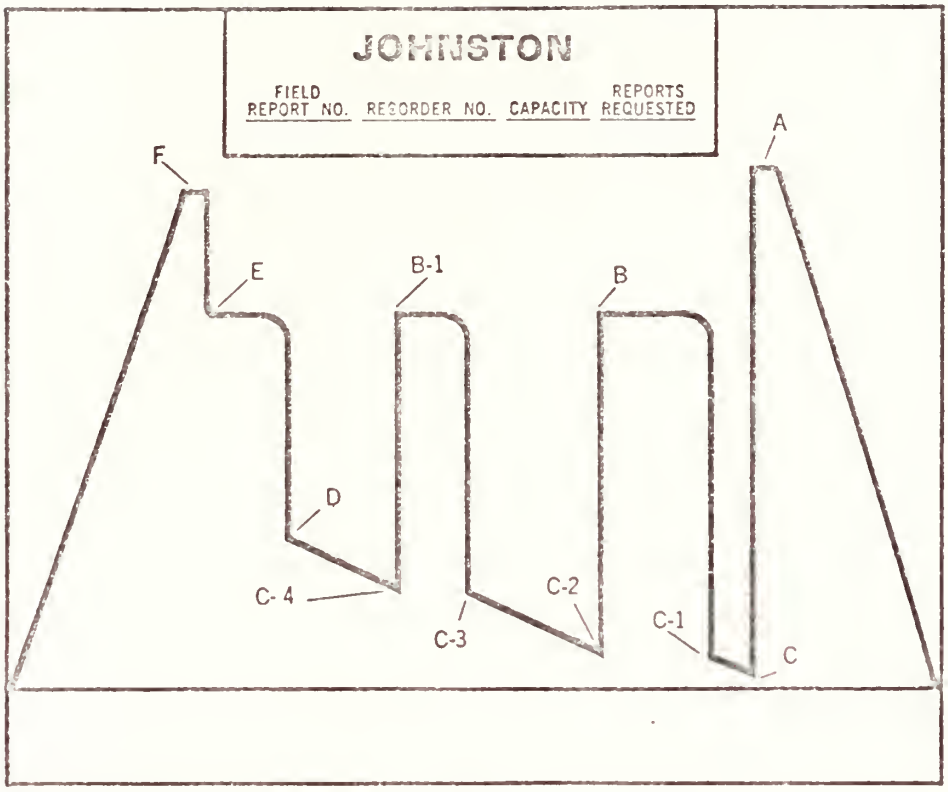
Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
32	183.1		42	318.3				
33	183.7		44	309.2				
34	184.3		46	300.7				
35	184.8		15 48	297.3				
40	188.2		50	334.1				
45	189.9		52	364.6				
50	190.5		54	365.8				
55	190.5		56	365.8				
11 57	190.5		58	365.8				
2	201.8		60	365.8				
4	211.4		62	368.0				
6	220.5		16 63	368.0				
8	227.8		64	362.4				
10	235.2		66	351.6				
12	240.8		68	340.9				
14	243.6		70	331.8				
16	244.2		17 72	323.9				
12 17	244.2		74	351.1				
18	242.5		76	369.7				
20	238.0		78	374.2				
22	234.0		80	375.9				
13 24	232.3		82	377.1				
26	252.7		84	378.8				
28	270.2		86	379.3				
30	286.0		18 87	379.3				
32	301.3		88	378.8				
34	314.3		90	366.3				
36	326.7		92	355.0				
38	334.1		94	344.3				
14 39	334.1		96	335.2				
40	327.9		98	325.6				
CONTINUED			19 99	320.5				

II B-360

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

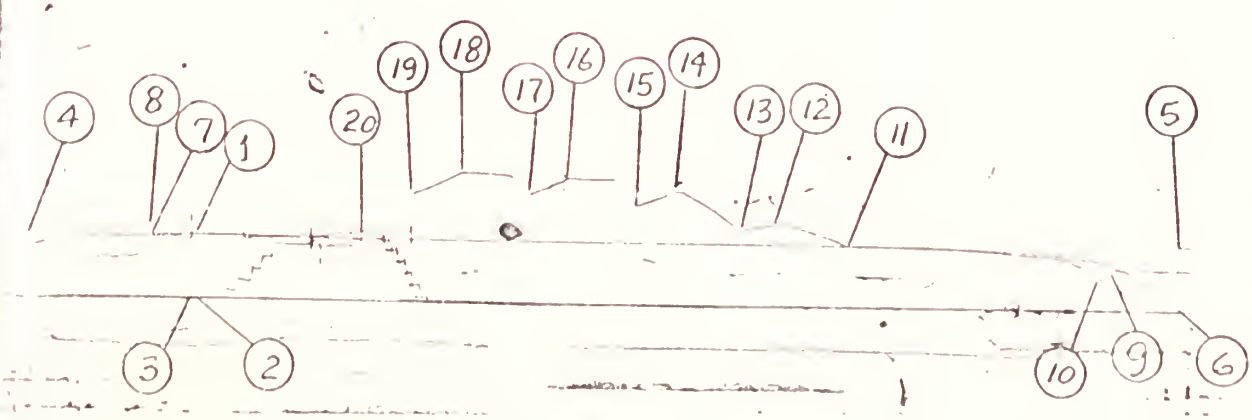
The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.

029

JOHNSTON

FIELD REPORT NO.	RECORDER NO.
04364 C	J-029
CAPACITY	REPORTS REQUESTED
2800#	14+



11 B-361

JOHNSTON
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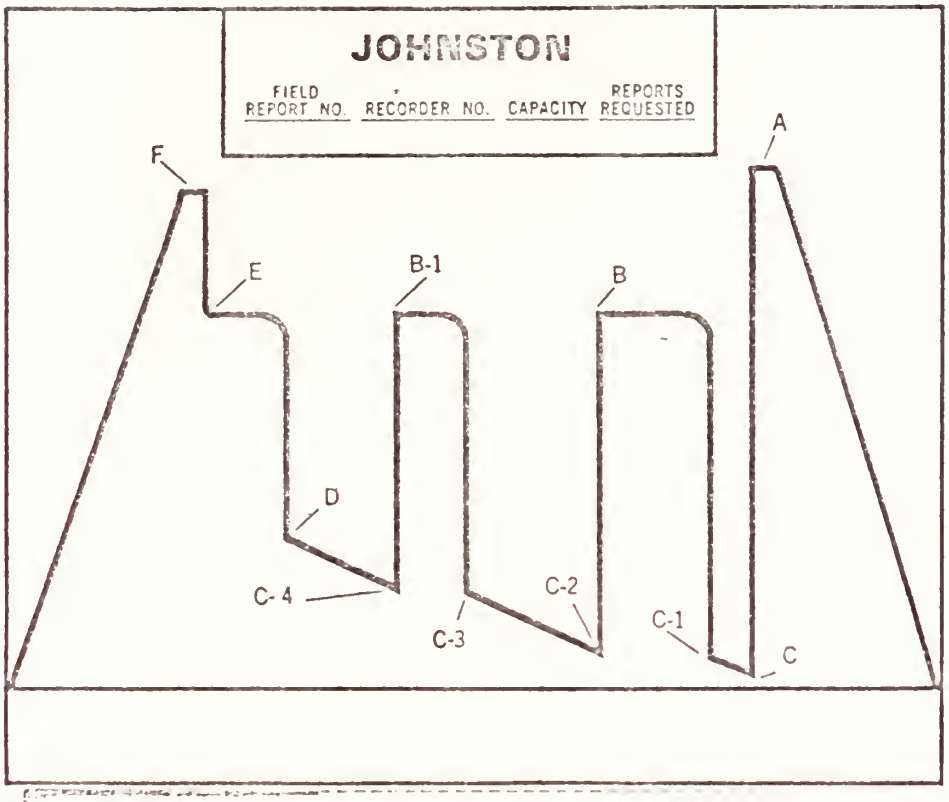
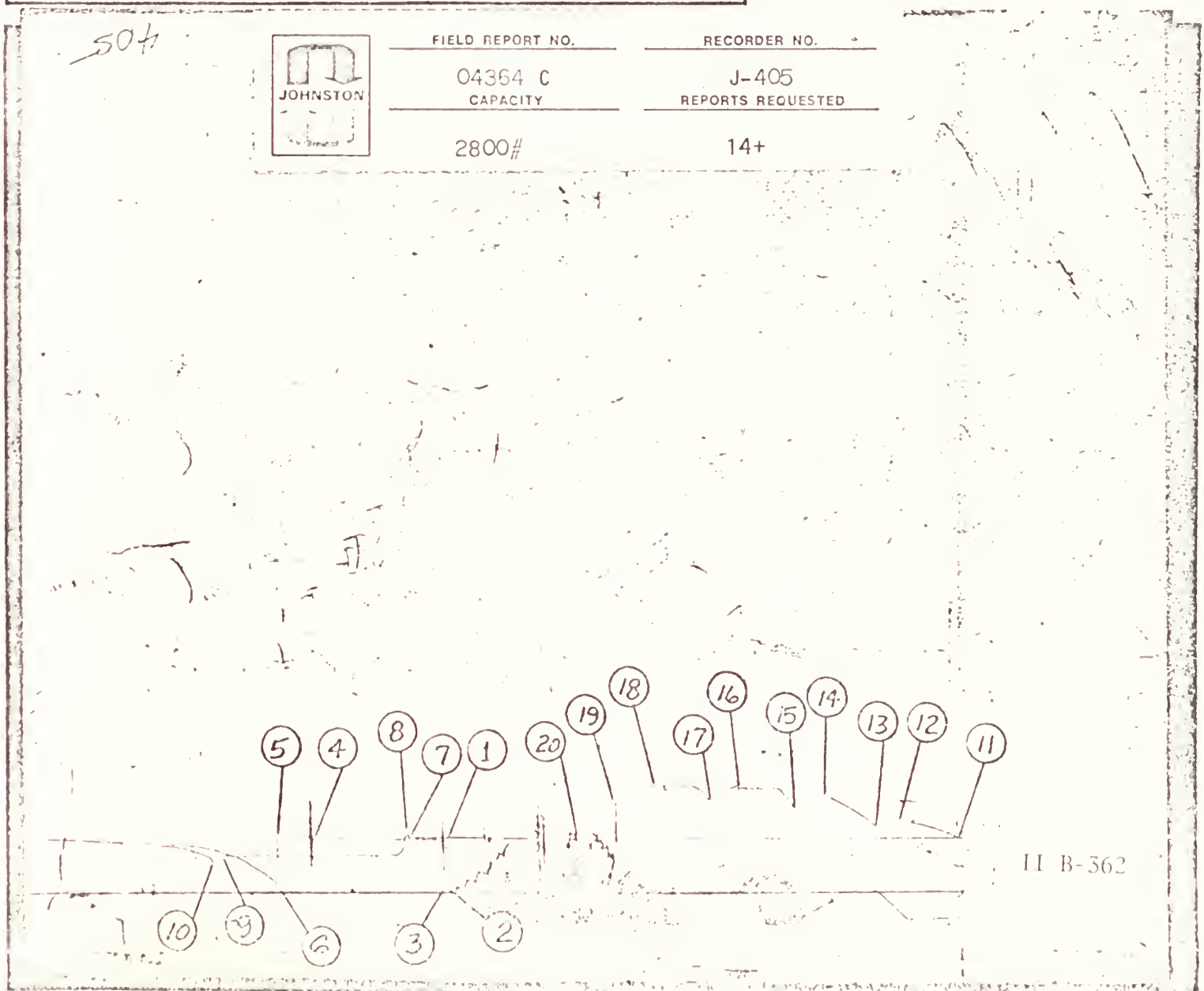
GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.



sperry-sun

POST OFFICE BOX 36363 HOUSTON, TEXAS 77036 (713) 494-3021

J. A. Fouché
President

November 21, 1974

Mr. F. C. Witmer
Atlantic Richfield Company
1500 Security Life Building
Denver, Colorado 80202

Dear Sir:

Enclosed is the original of our Precision Pressure Gauge Drill Stem Test job SPG-11210-A performed on your Federal SG-17 Well, Tract C-b, Piceance Creek Basin, Sorghum Gulch, Rio Blanco County, Colorado on November 14-15, 1974. Test interval was 0-866 feet and 866 feet to 919 feet.

Also enclosed is the chart for gauge No. 95 and No. 212 with Field Data Sheet.

Distribution is also being made according to the attached mailing list.

Thank you for this opportunity to be of service.

Very truly yours,

SPERRY-SUN

Carl Kisinger, Jr.

Carl Kisinger, Jr.
Manager Pressure Services

CK:jg
Enclosure

JOB NUMBER
SPG-11210-A

DATE OF JO
11-12-74 TO 11-13-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

PREPARED FOR

ATLANTIC RICHFIELD COMPANY

WELL NUMBER	FEDERAL SG-17
FIELD/LEASE	SORGHUM GULCH
COUNTY/PARISH	RIO BLANCO
STATE	COLORADO
TYPE OF TEST	DRILL STEM
REFERENCE ELEV	GROUND LEVEL

ADDITIONAL INFORMATION

USED GAUGE NO. 212 WITH 500 LB. ELEMENT

GAUGE TEST DEPTH IS 907.27 FEET

GROUND LEVEL REFERENCE IS 7036 FEET

TESTED 866 FEET TO 919 FEET

II B-364

22 POINTS REPORTED THIS JOB

JOB NUMBER
SPG-11210-A

DATE OF JO
11-12-74 TO 11-13-7

GAUGE/RUN NUMBER
212 RUN NO. 1 DST NO. 4

DATE OF RU
11-18-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
0.000	17.819	18	17	NOV 12,1974	INITIAL SHUTIN
.033	169.021	18	19	NOV 12,1974	
.067	174.673	18	21	NOV 12,1974	
.100	178.654	18	23	NOV 12,1974	
.133	179.165	18	25	NOV 12,1974	
.167	179.432	18	27	NOV 12,1974	
.200	179.455	18	29	NOV 12,1974	
.233	179.548	18	31	NOV 12,1974	
.267	179.559	18	33	NOV 12,1974	
.300	179.582	18	35	NOV 12,1974	
.333	179.617	18	37	NOV 12,1974	
.367	179.640	18	39	NOV 12,1974	
.400	179.664	18	41	NOV 12,1974	
.433	179.687	18	43	NOV 12,1974	
.467	179.699	18	45	NOV 12,1974	
.500	179.722	18	47	NOV 12,1974	
.533	179.733	18	49	NOV 12,1974	
.567	179.745	18	51	NOV 12,1974	
.600	179.745	18	53	NOV 12,1974	
.633	179.757	18	55	NOV 12,1974	
.667	179.768	18	57	NOV 12,1974	
.700	179.780	18	59	NOV 12,1974	END SHUT-IN

II B-365

22 POINTS REPORTED THIS RUN

JOB NUMBER
SPG-11210-A

DATE OF JO
11-12-74 TO 11-13-7

GAUGE/RUN NUMBER
212 RUN NO. 1 DST NO. 4

DATE OF RU
11-18-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
0.000	36.261	18 59	NOV 12,1974	OPEN TO FLOW
.033	58.788	19 01	NOV 12,1974	
.067	91.006	19 03	NOV 12,1974	
.100	106.465	19 05	NOV 12,1974	
.133	120.671	19 07	NOV 12,1974	
.167	136.397	19 09	NOV 12,1974	
.200	138.428	19 11	NOV 12,1974	
.233	147.898	19 13	NOV 12,1974	
.267	154.363	19 15	NOV 12,1974	
.300	161.999	19 17	NOV 12,1974	
.333	168.568	19 19	NOV 12,1974	
.367	174.522	19 21	NOV 12,1974	
.400	176.843	19 23	NOV 12,1974	
.433	182.066	19 25	NOV 12,1974	
.467	184.469	19 27	NOV 12,1974	
.500	186.720	19 29	NOV 12,1974	
.533	188.716	19 31	NOV 12,1974	
.567	190.585	19 33	NOV 12,1974	
.600	191.954	19 35	NOV 12,1974	
.633	193.811	19 37	NOV 12,1974	
.667	195.239	19 39	NOV 12,1974	
.700	196.516	19 41	NOV 12,1974	
.733	197.641	19 43	NOV 12,1974	
.767	198.639	19 45	NOV 12,1974	
.800	199.533	19 47	NOV 12,1974	
.833	200.346	19 49	NOV 12,1974	
.867	201.065	19 51	NOV 12,1974	
.900	201.703	19 53	NOV 12,1974	
.933	202.295	19 55	NOV 12,1974	
.967	202.783	19 57	NOV 12,1974	
1.000	203.235	19 59	NOV 12,1974	
1.033	203.676	20 01	NOV 12,1974	
1.067	204.025	20 03	NOV 12,1974	
1.100	204.326	20 05	NOV 12,1974	
1.133	204.628	20 07	NOV 12,1974	
1.167	204.907	20 09	NOV 12,1974	
1.200	205.116	20 11	NOV 12,1974	
1.233	205.301	20 13	NOV 12,1974	
1.267	205.487	20 15	NOV 12,1974	
1.300	205.638	20 17	NOV 12,1974	

JOB NUMBER
SPG-11210-A

DATE OF JOB
11-12-74 TO 11-13-74

GAUGE/RUN NUMBER
212 RUN NO. 1 DST NO. 4

DATE OF RUN
11-18-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
1.333	205.800	20 19	NOV 12,1974	
1.367	205.916	20 21	NOV 12,1974	
1.400	206.032	20 23	NOV 12,1974	
1.433	206.125	20 25	NOV 12,1974	
1.467	206.230	20 27	NOV 12,1974	
1.500	206.299	20 29	NOV 12,1974	
1.533	206.346	20 31	NOV 12,1974	
1.567	206.450	20 33	NOV 12,1974	
1.600	206.497	20 35	NOV 12,1974	
1.633	206.555	20 37	NOV 12,1974	
1.667	206.624	20 39	NOV 12,1974	
1.700	206.671	20 41	NOV 12,1974	
1.733	206.706	20 43	NOV 12,1974	
1.767	206.752	20 45	NOV 12,1974	
1.800	206.798	20 47	NOV 12,1974	
1.833	206.822	20 49	NOV 12,1974	
1.867	206.845	20 51	NOV 12,1974	
1.900	206.880	20 53	NOV 12,1974	
1.933	206.926	20 55	NOV 12,1974	
1.967	206.949	20 57	NOV 12,1974	
2.000	206.984	20 59	NOV 12,1974	
2.033	206.996	21 01	NOV 12,1974	
2.067	207.031	21 03	NOV 12,1974	
2.100	207.065	21 05	NOV 12,1974	
2.133	207.089	21 07	NOV 12,1974	
2.167	207.100	21 09	NOV 12,1974	
2.200	207.147	21 11	NOV 12,1974	
2.233	207.158	21 13	NOV 12,1974	
2.267	207.170	21 15	NOV 12,1974	
2.300	207.181	21 17	NOV 12,1974	
2.333	207.205	21 19	NOV 12,1974	
2.367	207.216	21 21	NOV 12,1974	
2.400	207.239	21 23	NOV 12,1974	
2.433	207.251	21 25	NOV 12,1974	
2.467	207.274	21 27	NOV 12,1974	
2.500	207.297	21 29	NOV 12,1974	
2.533	207.332	21 31	NOV 12,1974	
2.567	207.344	21 33	NOV 12,1974	
2.600	207.355	21 35	NOV 12,1974	
2.633	207.379	21 37	NOV 12,1974	

JOB NUMBER
SPG-11210-A

DATE OF JO
11-12-74 TO 11-13-7

GAUGE/RUN NUMBER
212 RUN NO. 1 DST NO. 4

DATE OF RU
11-18-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
2.667	207.390	21	39	NOV 12,1974	
2.700	207.402	21	41	NOV 12,1974	
2.733	207.414	21	43	NOV 12,1974	
2.767	207.425	21	45	NOV 12,1974	
2.800	207.448	21	47	NOV 12,1974	
2.833	207.460	21	49	NOV 12,1974	
2.867	207.472	21	51	NOV 12,1974	
2.900	207.483	21	53	NOV 12,1974	
2.933	207.495	21	55	NOV 12,1974	
2.967	207.506	21	57	NOV 12,1974	
3.000	207.518	21	59	NOV 12,1974	
3.033	207.530	22	01	NOV 12,1974	
3.067	207.541	22	03	NOV 12,1974	
3.100	207.553	22	05	NOV 12,1974	
3.133	207.564	22	07	NOV 12,1974	
3.167	207.588	22	09	NOV 12,1974	
3.200	207.576	22	11	NOV 12,1974	
3.233	207.599	22	13	NOV 12,1974	
3.267	207.634	22	15	NOV 12,1974	
3.300	207.680	22	17	NOV 12,1974	
3.333	207.738	22	19	NOV 12,1974	
3.367	208.098	22	21	NOV 12,1974	
3.400	208.435	22	23	NOV 12,1974	
3.433	209.236	22	25	NOV 12,1974	
3.467	209.410	22	27	NOV 12,1974	
3.500	209.584	22	29	NOV 12,1974	
3.533	209.723	22	31	NOV 12,1974	
3.567	209.862	22	33	NOV 12,1974	
3.600	209.932	22	35	NOV 12,1974	
3.633	210.048	22	37	NOV 12,1974	
3.667	210.141	22	39	NOV 12,1974	
3.700	209.770	22	41	NOV 12,1974	
3.733	209.955	22	43	NOV 12,1974	
3.767	209.595	22	45	NOV 12,1974	
3.800	209.363	22	47	NOV 12,1974	
3.833	209.143	22	49	NOV 12,1974	
3.867	208.957	22	51	NOV 12,1974	
3.900	208.806	22	53	NOV 12,1974	
3.933	208.679	22	55	NOV 12,1974	
3.967	208.574	22	57	NOV 12,1974	

JOB NUMBER
SPG-11210-A

DATE OF JOB
11-12-74 TO 11-13-74

GAUGE/RUN NUMBER
212 RUN NO. 1 DST NO. 4

DATE OF RUN
11-18-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
4.000	228.803	22	59	NOV 12,1974	START AIR
4.033	211.023	23	01	NOV 12,1974	INJECTION
4.067	192.163	23	03	NOV 12,1974	
4.100	178.515	23	05	NOV 12,1974	
4.133	165.377	23	07	NOV 12,1974	
4.167	152.912	23	09	NOV 12,1974	
4.200	146.703	23	11	NOV 12,1974	
4.233	145.368	23	13	NOV 12,1974	
4.267	143.256	23	15	NOV 12,1974	
4.300	143.279	23	17	NOV 12,1974	
4.333	143.244	23	19	NOV 12,1974	
4.367	143.256	23	21	NOV 12,1974	
4.400	142.710	23	23	NOV 12,1974	
4.433	142.943	23	25	NOV 12,1974	
4.467	143.024	23	27	NOV 12,1974	
4.500	142.873	23	29	NOV 12,1974	
4.533	142.838	23	31	NOV 12,1974	
4.567	142.745	23	33	NOV 12,1974	
4.600	142.722	23	35	NOV 12,1974	
4.633	142.931	23	37	NOV 12,1974	
4.667	142.943	23	39	NOV 12,1974	
4.700	142.838	23	41	NOV 12,1974	
4.733	142.710	23	43	NOV 12,1974	
4.767	142.873	23	45	NOV 12,1974	
4.800	142.884	23	47	NOV 12,1974	
4.833	142.745	23	49	NOV 12,1974	
4.867	142.594	23	51	NOV 12,1974	
4.900	142.780	23	53	NOV 12,1974	
4.933	142.618	23	55	NOV 12,1974	
4.967	142.478	23	57	NOV 12,1974	
5.000	142.676	23	59	NOV 12,1974	
5.033	127.971	00	01	NOV 13,1974	END AIR
5.067	144.695	00	03	NOV 13,1974	INJECTION
5.100	151.926	00	05	NOV 13,1974	
5.133	154.676	00	07	NOV 13,1974	
5.167	162.823	00	09	NOV 13,1974	
5.200	170.193	00	11	NOV 13,1974	
5.233	174.731	00	13	NOV 13,1974	
5.267	179.548	00	15	NOV 13,1974	
5.300	182.287	00	17	NOV 13,1974	

JOB NUMBER
SPG-11210-A

DATE OF JO
11-12-74 TO 11-13-7

GAUGE/RUN NUMBER
212 RUN NO. 1 DST NO. 4

DATE OF RU
11-18-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
5.333	183.865	00	19	NOV 13,1974	
5.367	185.943	00	21	NOV 13,1974	
5.400	187.370	00	23	NOV 13,1974	
5.433	189.413	00	25	NOV 13,1974	
5.467	191.293	00	27	NOV 13,1974	
5.500	193.034	00	29	NOV 13,1974	
5.533	202.934	00	31	NOV 13,1974	
5.567	194.577	00	33	NOV 13,1974	
5.600	196.063	00	35	NOV 13,1974	
5.633	196.249	00	37	NOV 13,1974	
5.667	198.419	00	39	NOV 13,1974	
5.700	199.429	00	41	NOV 13,1974	
5.733	200.287	00	43	NOV 13,1974	
5.767	201.123	00	45	NOV 13,1974	
5.800	201.819	00	47	NOV 13,1974	
5.833	202.458	00	49	NOV 13,1974	
5.867	203.015	00	51	NOV 13,1974	
5.900	203.514	00	53	NOV 13,1974	
5.933	203.932	00	55	NOV 13,1974	
5.967	204.350	00	57	NOV 13,1974	
6.000	204.721	00	59	NOV 13,1974	
6.033	205.023	01	01	NOV 13,1974	
6.067	205.023	01	03	NOV 13,1974	START 5 GAL.
6.100	221.689	01	05	NOV 13,1974	MIN. INJECTION
6.133	230.080	01	07	NOV 13,1974	RATE
6.167	238.285	01	09	NOV 13,1974	
6.200	244.924	01	11	NOV 13,1974	
6.233	252.015	01	13	NOV 13,1974	
6.267	256.913	01	15	NOV 13,1974	
6.300	256.193	01	17	NOV 13,1974	END 5 GAL. MIN
6.333	251.667	01	19	NOV 13,1974	INJECTION RATE
6.367	247.350	01	21	NOV 13,1974	
6.400	243.369	01	23	NOV 13,1974	
6.433	249.891	01	25	NOV 13,1974	
6.467	260.209	01	27	NOV 13,1974	START 10 GAL.
6.500	278.628	01	29	NOV 13,1974	MIN. INJECTION
6.533	295.746	01	31	NOV 13,1974	
6.567	312.691	01	33	NOV 13,1974	
6.600	327.326	01	35	NOV 13,1974	
6.633	340.975	01	37	NOV 13,1974	

JOB NUMBER
SPG-11210-A

DATE OF JOB
11-12-74 TO 11-13-74

GAUGE/RUN NUMBER
212 RUN NO. 1 DST NO. 4

DATE OF RUN
11-18-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
6.667	343.934	01	39	NOV 13,1974	
6.700	344.155	01	41	NOV 13,1974	END 10 GAL.
6.733	333.605	01	43	NOV 13,1974	MIN. INJECTION
6.767	324.541	01	45	NOV 13,1974	
6.800	316.150	01	47	NOV 13,1974	
6.833	318.378	01	49	NOV 13,1974	
6.867	341.172	01	51	NOV 13,1974	START 20 GAL.
6.900	380.632	01	53	NOV 13,1974	MIN. INJECTION
6.933	380.969	01	55	NOV 13,1974	
6.967	380.029	01	57	NOV 13,1974	
7.000	380.911	01	59	NOV 13,1974	
7.033	382.002	02	01	NOV 13,1974	
7.067	381.932	02	03	NOV 13,1974	END 20 GAL.
7.100	369.734	02	05	NOV 13,1974	MIN. INJECTION
7.133	359.219	02	07	NOV 13,1974	
7.167	349.029	02	09	NOV 13,1974	
7.200	340.069	02	11	NOV 13,1974	
7.233	361.923	02	13	NOV 13,1974	START 9 GAL.
7.267	383.998	02	15	NOV 13,1974	MIN. INJECTION
7.300	390.648	02	17	NOV 13,1974	
7.333	392.633	02	19	NOV 13,1974	
7.367	394.200	02	21	NOV 13,1974	
7.400	395.476	02	23	NOV 13,1974	
7.433	396.207	02	25	NOV 13,1974	END 9 GAL. INJ

224 POINTS REPORTED THIS RUN

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

PREPARED FOR

ATLANTIC RICHFOELD COMPANY

WELL NUMBER	FEDERAL SG-17
FIELD/LEASE	SORGHUM GULCH
COUNTY/PARISH	RIO BLANCO
STATE	COLORADO
TYPE OF TEST	DRILL STEM
REFERENCE ELEV	GROUND LEVEL

ADDITIONAL INFORMATION

USED GAUGE NO. 95 WITH 1000 LB. ELEMENT

GAUGE TEST DEPTH IS 826.71 FEET

GAUGE IS IN ANNULUS WITH PACKER

SET AT 866.0 FEET

11 POINTS REPORTED THIS JOB

PRESSURE GAUGE DRILL STEM TEST SHEET

Job No. SPG-11210-A Date 10-12-74 Run No. 1 DST #4 Office CASPER

Customer ARCO ETAL Location SEC. 16, 3-S, 96-W

State COLORADO County/Parish RIO BLANCO

Well FEDERAL SG No. 17 Field SORGHUM GULCH

USE MILITARY TIME FOR ALL TIMES

	Time	Date	Time	Date	Time Charged
Arrive: Well/Dock	1. [illegible]	11-12-74	2.		
Depart: Well/Dock	1. [illegible]	11-13-74	2.		18 Hrs.
Gauge Start in Hole	1. 1945	11-12-74	2.		
Gauge Out of Hole	1. 0543	11-13-74	2.		13 Hrs.

No. Trips 1 Miles _____ Total Mileage _____

Top Gauge # 95 Element # 23747 Range 1000 Time Mode 2 MIN.

Btm. Gauge # 212 Element # 30947 Range 500 Time Mode 2 MIN.

Type Tool [illegible] Test Depth 966-919 Zero Point GROUND LEVEL

Packer Depth 866.0 Tail Pipe Depth 919.0 Top Gauge Depth 836.71

Bottom Hole Temp. 53°F Atmos. Temp. 52°F Bottom Gauge Depth 907.27

[illegible]

TIME INFORMATION

	Time	Date
On Bottom	1910	11-12-74
Packer Set	1910	11-12-74
Initial Open	1921-1922½	11-12-74
Initial Shut-In	1929-1959	11-12-74
~~Start~~ Flow	1959-1911	11-12-74
Final Shut-In	[illegible]	11-12-74
Packer Unseated	0259	11-13-74

PRESSURE INFORMATION

Initial Hydrostatic Mud	
Initial Draw Down	
Initial Build-Up	
Final Flow	
Final Build-Up	
Final Hydrostatic Mud	
Mud Weight	

TIME OF SURFACE NULLS

Top Gauge 11-12-74 1804 to 11-13-74 0509.20 Bottom Gauge 11-12-74 1415 to 11-13-74 0543.05

Remarks [illegible]

[illegible]

[illegible]

[illegible]

Operator

SP-423

COMPANY ATLANTIC RICHFIELD COMPANY WELL FEDERAL S-G #17 TEST NO. 5 COUNTY RIO BLANCO STATE COLORADO

JOHNSTON

Schlumberger

technical report

II B-375

F.R. #04365 C

JOHNSTON

PRESSURE LOG*

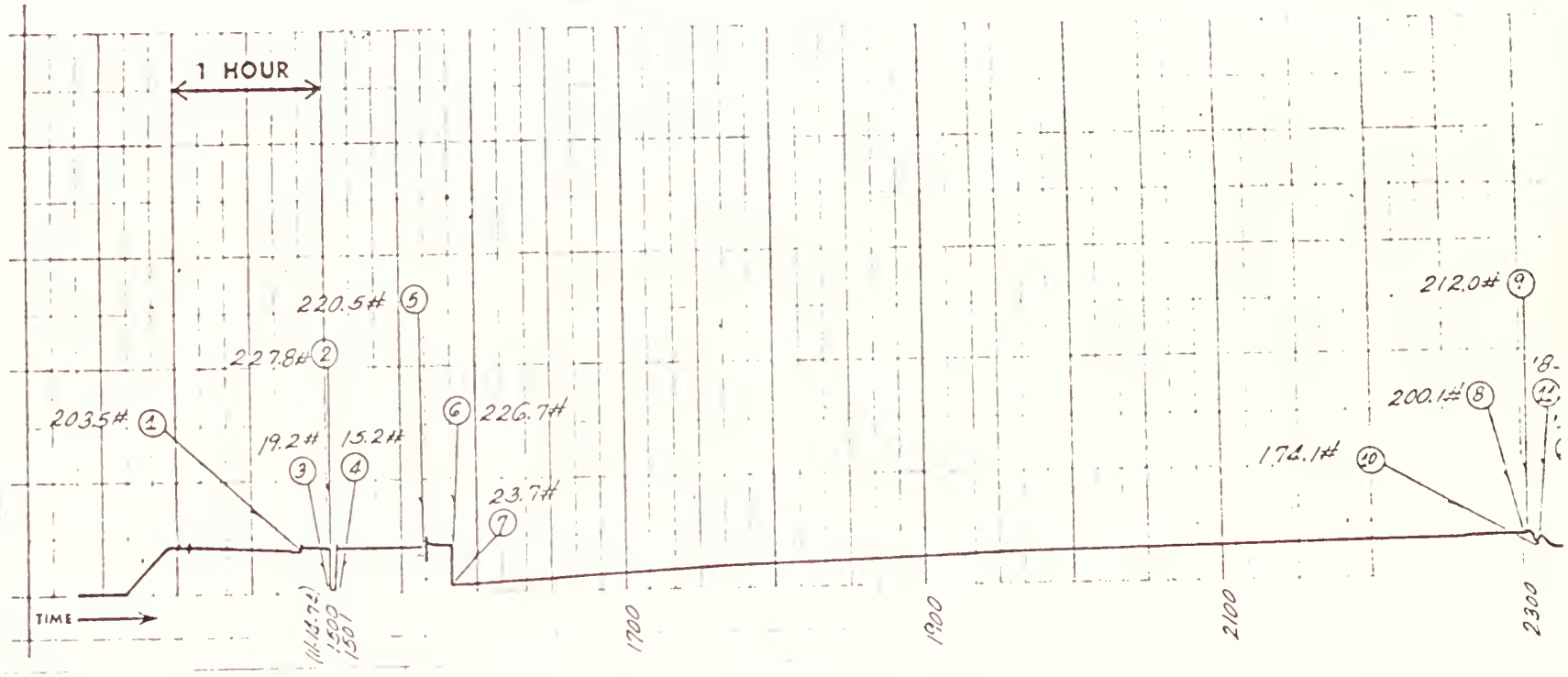
Field Report No. 04365C

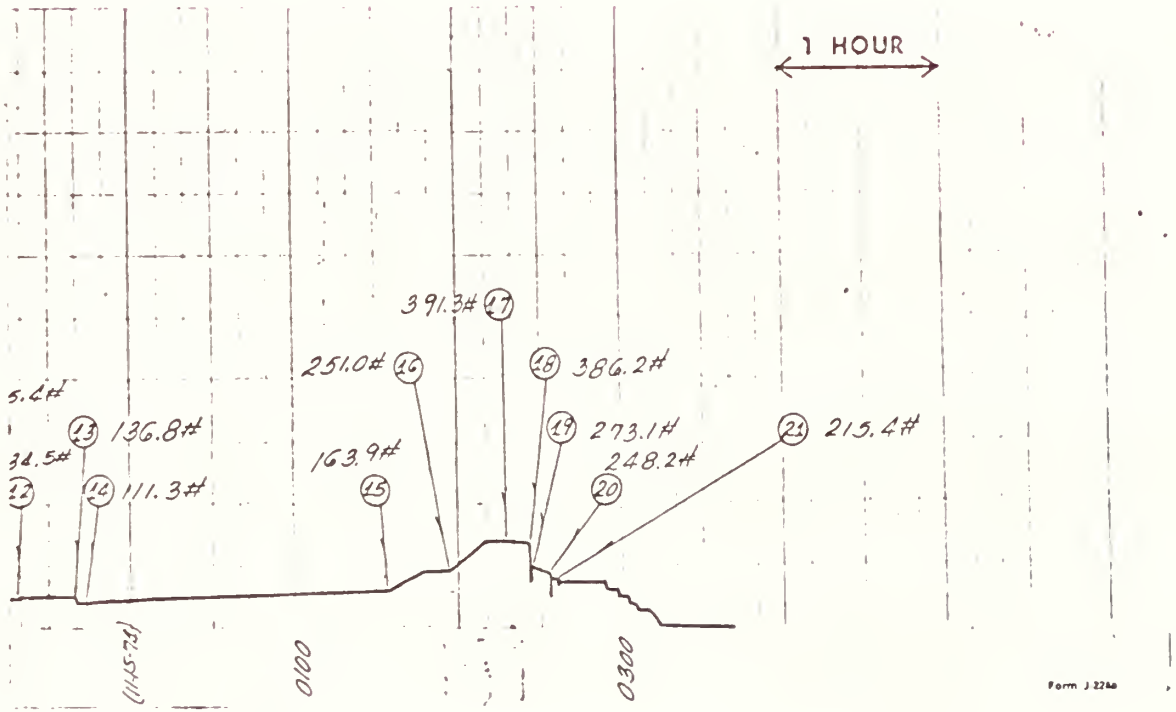
Instrument Number J-405

Capacity 2800 p.s.i.

Depth 937 ft.

*a continuous tracing of the original chart





Form J-224a

JOHNSTON
...found a better way

SURFACE INFORMATION

Description (Rate of Flow)	Time	Pressure (P.S.I.G.)	Surface Choke
Opened Tool (11-14-74)	1501	-	-
LIGHT BLOW			
CLOSED FOR INITIAL SHUT-IN	1509	-	-
FINISHED SHUT-IN	1539	-	-
RE-OPENED TOOL	1551	-	-
(11-15-74)			
JETTED AIR FROM	0108	-	-
TO	0145	-	-
WATER INJECTION			
5 GAL./MIN. FOR 15 MIN.			
10 MINUTE DECLINE			
10 GAL./MIN. FOR 15 MIN.			
10 MINUTE DECLINE			
PULLED PACKER LOOSE	0234	-	-

Cushion Type	Amount	Pressure	Bottom Choke
	-		Size 3/4"

MUD DATA

Mud Type - Wt. -
Viscosity - Water Loss - C.C.
Resist: of Mud - @ - °F; of Filtrate - @ - °F
Chloride Content - PPM

EQUIPMENT & HOLE DATA

Type Test M.F.E. OPEN HOLE
Formation Tested PARACHUTE CREEK
Elevation 7036 Ft.
Net Productive Interval - Ft.
Estimated Porosity - %
All Depths Measured From GROUND LEVEL
Total Depth 970 Ft.
Main Hole/Casing Size 6 3/4"
Rat Hole/Liner Size -
Drill Collar Length 327' I.D. 2 1/8"
Drill Pipe Length 548' I.D. 2 5/8"
Packer Depth(s) 915 & 919 Ft.

MULTI-FLOW EVALUATOR FLUID SAMPLE DATA

Sampler Pressure _____ P.S.I.G. at Surface
Recovery: Cu. Ft. Gas _____
cc. Oil _____
cc. Water _____
cc. Mud _____
Tot. Liquid cc. _____
Gravity _____ °API @ _____ °F.
Gas/Oil Ratio _____ cu. ft./bbl.

	RESISTIVITY	CHLORIDE CONTENT
Recovery Water	@ °F.	ppm
Recovery Mud	@ °F.	
Recovery Mud Filtrate	@ °F.	ppm
Mud Pit Sample	@ °F.	
Mud Pit Sample Filtrate	@ °F.	ppm

RECOVERY DESCRIPTION	FEET	BARRELS	% OIL	% WATER	% OTHERS	API GRAVITY	RESISTIVITY	CHL. PPM
WATER	363.5	1.68				@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	

Remarks:

Address 1500 SECURITY LIFE BUILDING; DENVER, COLORADO 80202; ATTN: MR. D. B. TAIT

Company ATLANTIC RICHFIELD COMPANY Field SORGHUM
Well FEDERAL S-G #17 Location SEC. 16-3S-96W
Test Interval 919' TO 970' Test # 5 II B-377 Date 11-14-74

County RIO BLANCO State COLORADO
Technician MOUDRY (VERNAL) Test Approved By MR. L. M. POWERS

Field Report No. 04365 C
No. Reports Requested 14 (13xs)

JOHNSTON ...found a better way

PRESSURE DATA

Instrument No.	T-254			
Capacity (P.S.I.G.)	1700			
Instrument Depth	896'			
Instrument Opening	INSIDE			
Pressure Gradient P.S.I./Ft.				
Well Temperature °F.	85			
Initial Hydrostatic Mud A				
Initial Shut-in B				
Initial Flow C				
Final Flow D				
Final Shut-in E				
Final Hydrostatic Mud F				

Field Report No. 04365 C

TIME DATA

Time Given	Time Computed
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

POINTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
1	226.5		4 0	7.9		50	69.0	
2	257.0		2	249.0		55	73.6	
3	7.9		4	249.8		60	77.8	
4	7.9		6	249.8		65	81.6	
5	247.9		8	250.2		70	85.5	
6	257.8		10	248.7		75	88.9	
7	14.0		12	248.3		80	92.7	
8	220.8		14	248.3		85	96.6	
9	237.2		16	247.9		90	101.5	
10	191.0		18	247.9		95	105.7	
11	200.9		20	247.9		100	109.5	
12	148.1		22	247.9		105	114.5	
13	150.4		24	247.9		110	119.1	
14	116.0		26	247.9		115	124.1	
15	184.5		28	247.9		120	127.5	
16	285.4		30	247.9		125	130.9	
17	448.2		32	247.9		130	134.8	
18	440.5		34	247.9		135	138.6	
19	306.0		36	247.9		140	141.6	
20	267.8		5 38	247.9		145	143.9	
21	238.7					150	146.2	
			7 0	14.0		155	148.5	
			5	18.6		160	151.2	
			10	25.1		165	153.1	
			15	31.2		170	155.4	
			20	36.5		175	158.1	
			25	41.9		180	160.4	
			30	48.0	II B-378	185	163.1	
			35	53.7		190	165.7	
			40	59.1		195	167.6	
			45	63.3		200	169.6	
			CONTINUED			CONTINUED		

JOHNSTON ...found a better way

PRESSURE DATA

Instrument No.	T-254			
Capacity (P.S.I.G.)				
Instrument Depth				
Instrument Opening				
Pressure Gradient P.S.I./Ft.				
Well Temperature °F.				
Initial Hydrostatic Mud A				
Initial Shut-in B				
Initial Flow C				
Final Flow D				
Final Shut-in E				
Final Hydrostatic Mud F				

Field Report No. 04365 C

TIME DATA

Time Given	Time Computed
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
205	171.5		360	207.0		26	150.8	
210	173.4		365	207.0		28	150.8	
215	175.3		370	207.8		30	150.4	
220	177.2		375	208.5		32	150.4	
225	178.7		380	210.8		34	150.4	
230	180.6		385	211.2		36	150.4	
235	182.2		390	211.2		13 38	150.4	
240	183.7		395	212.7		40	116.0	
245	184.8		400	213.9		42	116.0	
250	186.0		405	215.4		14 43	116.0	
255	186.7		410	217.7		5	125.2	
260	187.9		415	219.6		10	130.6	
265	189.0		420	220.8		15	135.2	
270	190.2		425	220.8		20	139.7	
275	191.0		430	220.8		25	142.8	
280	192.1		8 431	220.8		30	145.9	
285	193.2					35	148.5	
290	194.0		9 1	237.2		40	149.7	
295	195.2		2	184.1		45	152.0	
300	196.3		10 4	191.0		50	154.3	
305	197.1					55	158.5	
310	197.8		11 6	200.9		60	160.8	
315	199.0		8	158.1		65	163.4	
320	199.7		10	145.9		70	166.5	
325	200.9		12	143.6		75	169.2	
330	201.7		14	142.8		80	171.5	
335	203.1		16	142.8		85	173.4	
340	203.9		12 18	148.1		90	176.0	
345	205.5		20	150.8		95	178.3	
350	207.0		22	150.8		100	180.2	
355	207.0		24	150.8		105	182.5	
CONTINUED			CONTINUED			CONTINUED		

II B-379

JOHNSTON ...found a better way

PRESSURE DATA

Instrument No.		T-254			Field Report No. 04365 C
Capacity (P.S.I.G.)					
Instrument Depth					
Instrument Opening					TIME DATA
Pressure Gradient P.S.I./Ft.					
Well Temperature °F.					
Initial Hydrostatic Mud	A				Time Given / Time Computed
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
110	184.5							
15 111	184.5							
2	199.7							
4	214.6							
6	230.3							
8	244.8							
10	259.4							
12	273.9							
14	285.4							
16	285.4							
18	285.4							
20	285.4							
16 22	285.4							
24	299.1							
26	320.9							
28	348.0							
30	375.2							
32	401.2							
34	425.6							
36	448.2							
38	448.2							
40	448.2							
17 42	448.2							
44	442.8							
46	442.1							
48	441.3							
50	440.5							
51	440.5							
18 52	440.5							

JOHNSTON ...found a better way

PRESSURE DATA

Instrument No.	J-029			
Capacity (P.S.I.G.)	2800			Field Report No. 04365 C
Instrument Depth	902'			
Instrument Opening	INSIDE			
Pressure Gradient P.S.I./Ft.				TIME DATA
Well Temperature °F.	85			
				Time Given / Time Computed
Initial Hydrostatic Mud A				
Initial Shut-in B				Mins. / Mins.
Initial Flow C				Mins. / Mins.
				Mins. / Mins.
				Mins. / Mins.
Final Flow D				Mins. / Mins.
Final Shut-in E				Mins. / Mins.
Final Hydrostatic Mud F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

POINTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
1	189.0		4 0	6.6		50	57.0	
2	213.4		2	208.9		55	61.0	
3	6.6		4	208.9		60	64.4	
4	6.6		6	208.9		65	67.2	
5	209.4		8	208.9		70	70.6	
6	216.2		10	208.9		75	74.0	
7	12.2		12	208.9		80	76.8	
8	186.8		14	208.9		85	80.8	
9	199.8		16	208.9		90	85.3	
10	125.0		18	208.9		95	89.3	
11	174.3		20	208.9		100	92.7	
12	123.9		22	208.9		105	96.1	
13	125.6		24	208.9		110	99.5	
14	98.9		26	208.9		115	103.5	
15	155.0		28	209.4		120	106.3	
16	241.7		30	209.4		125	109.7	
17	380.0		32	209.4		130	112.5	
18	373.2		34	209.4		135	115.4	
19	260.4		36	209.4		140	117.6	
20	228.7		5 38	209.4		145	119.3	
21	202.6					150	121.6	
			7 0	12.2		155	123.3	
			5	13.4		160	125.6	
			10	19.0		165	127.8	
			15	24.1		170	129.0	
			20	28.7		175	131.2	
			25	33.8		180	132.9	
			30	38.9		185	135.2	
			35	43.4		190	136.9	
			40	47.9		195	138.6	
			45	53.0		200	140.9	
			CONTINUED			CONTINUED		

II B-581

JOHNSTON ...found a better way

PRESSURE DATA

Instrument No.		J-029			Field Report No. 04365 C
Capacity (P.S.I.G.)		*			
Instrument Depth					
Instrument Opening					
Pressure Gradient P.S.I./Ft.					TIME DATA
Well Temperature °F.					
					Time Given / Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
205	142.0		360	174.3		28	125.6	
210	143.7		365	174.9		30	125.6	
215	144.8		370	175.4		32	125.6	
220	146.5		375	176.0		34	125.6	
225	147.7		380	177.1		36	125.6	
230	149.4		385	179.4		13 38	125.6	
235	151.1		390	179.4		40	98.9	
240	152.8		395	179.4		42	98.9	
245	153.9		400	179.4		14 43	98.9	
250	155.0		405	181.1		5	104.6	
255	155.6		410	183.4		10	108.6	
260	156.7		415	185.1		15	112.5	
265	157.3		420	186.8		20	115.9	
270	157.9		425	186.8		25	118.8	
275	159.0		430	186.8		30	121.6	
280	160.0		8 431	186.8		35	123.9	
285	160.7					40	125.6	
290	161.8		9 1	199.8		45	126.1	
295	163.0		2	157.3		50	128.9	
300	163.5		10 4	125.0		55	133.5	
305	164.7		11 6	174.3		60	134.1	
310	165.2		8	134.6		65	136.9	
315	166.4		10	123.9		70	138.6	
320	167.5		12	122.7		75	141.4	
325	168.1		14	122.1		80	143.7	
330	169.2		16	122.1		85	145.4	
335	170.3		12 18	123.9		90	147.1	
340	170.9		20	126.1		95	149.4	
345	171.5		22	125.6		100	151.6	
350	172.0		24	125.6		105	152.8	
355	174.3		26	125.6		110	155.0	
CONTINUED			CONTINUED			CONTINUED		

II B-382

JOHNSTON ...found a better way

PRESSURE DATA

Instrument No.	J-029			
Capacity (P.S.I.G.)				
Instrument Depth				
Instrument Opening				
Pressure Gradient P.S.I./Ft.				
Well Temperature °F.				
Initial Hydrostatic Mud A				
Initial Shut-in B				
Initial Flow C				
Final Flow D				
Final Shut-in E				
Final Hydrostatic Mud F				

Field Report No. 04365 C

TIME DATA

Time Given	Time Computed
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point	Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point	Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point	Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
15	111	155.0									
	2	167.5									
	4	180.0									
	6	193.0									
	8	205.5									
	10	217.9									
	12	229.8									
	14	240.6									
	16	241.7									
	18	241.7									
	20	241.7									
16	22	241.7									
	24	257.6									
	26	280.3									
	28	304.1									
	30	326.8									
	32	348.9									
	34	371.5									
	36	380.0									
	38	380.0									
	40	380.0									
17	42	380.0									
	44	377.8									
	46	376.1									
	48	374.4									
	50	373.2									
	51	373.2									
18	52	373.2									

II B-383

JOHNSTON
...found a better way

PRESSURE DATA

Instrument No.	J-405			
Capacity (P.S.I.G.)	2800			Field Report No. 04365 C
Instrument Depth	937'			
Instrument Opening	OUTSIDE			
Pressure Gradient P.S.I./Ft.				TIME DATA
Well Temperature °F.	85			
				Time Given / Time Computed
Initial Hydrostatic Mud A				
Initial Shut-in B				Mins. / Mins.
Initial Flow C				Mins. / Mins.
				Mins. / Mins.
				Mins. / Mins.
Final Flow D				Mins. / Mins.
Final Shut-in E				Mins. / Mins.
Final Hydrostatic Mud F				

Remarks:

** Shut in pressure did not reach static reservoir pressure.*

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

POINTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
1	203.5		4 0	15.2		50	63.8	
2	227.8		2	220.5		55	68.4	
3	19.2		4	220.5		60	72.3	
4	15.2		6	220.5		65	75.7	
5	220.5		8	220.5		70	79.1	
6	226.7		10	220.5		75	82.5	
7	23.7		12	220.5		80	85.9	
8	200.1		14	220.5		85	89.3	
9	212.0		16	220.5		90	93.3	
10	174.1		18	220.5		95	97.2	
11	185.4		20	220.5		100	100.6	
12	134.5		22	220.5		105	105.7	
13	136.8		24	220.5		110	109.7	
14	111.3		26	220.5		115	114.2	
15	163.9		28	220.5		120	117.6	
16	251.0		30	220.5		125	121.0	
17	391.3		32	220.5		130	123.8	
18	386.2		34	220.5		135	126.6	
19	273.1		36	220.5		140	128.9	
20	248.2		5 38	220.5		145	131.1	
21	215.4					150	133.4	
			7 0	23.7		155	135.7	
			5	23.7		160	137.4	
			10	27.6		165	139.1	
			15	32.2		170	141.3	
			20	36.7		175	143.0	
			25	41.8		180	144.7	
			30	46.9	II B-384	185	147.0	
			35	50.8		190	148.7	
			40	55.9		195	150.4	
			45	60.5		200	152.1	
			CONTINUED			CONTINUED		

JOHNSTON ...found a better way

PRESSURE DATA

Instrument No.		J-405			Field Report No. 04365 C
Capacity (P.S.I.G.)					
Instrument Depth					
Instrument Opening					
Pressure Gradient P.S.I./Ft.					TIME DATA
Well Temperature °F.					
Initial Hydrostatic Mud	A				Time Given / Time Computed
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
205	153.8		360	184.9		26	137.9	
210	156.6		365	186.0		28	137.4	
215	158.3		370	186.6		30	137.4	
220	159.4		375	187.1		32	137.4	
225	159.4		380	188.3		34	136.8	
230	161.1		385	188.8		36	136.8	
235	162.8		390	189.9		13 38	136.8	
240	163.9		395	190.5		40	111.3	
245	164.5		400	191.1		42	111.3	
250	165.6		405	193.3		14 43	111.3	
255	166.2		410	197.3		5	117.6	
260	167.3		415	200.1		10	122.1	
265	167.9		420	200.1		15	123.8	
270	169.0		425	200.1		20	127.7	
275	169.5		430	200.1		25	130.6	
280	170.7		8 431	200.1		30	133.4	
285	171.3					35	135.7	
290	172.4		9 1	212.0		40	136.2	
295	173.0		2	169.0		45	137.9	
300	174.1		10 4	174.1		50	140.8	
305	174.7		11 6	185.4		55	143.0	
310	175.8		8	148.1		60	145.3	
315	176.4		10	137.9		65	147.5	
320	176.9		12	135.7		70	149.8	
325	178.1		14	135.1		75	152.1	
330	179.2		16	145.1		80	153.8	
335	179.8		12 18	134.5	11 B-385	85	155.5	
340	180.9		20	137.4		90	157.2	
345	182.0		22	137.9		95	159.4	
350	182.6		24	137.9		100	160.5	
355	183.7					105	162.8	
CONTINUED			CONTINUED			CONTINUED		

JOHNSTON ...found a better way

PRESSURE DATA

Instrument No.	J-405			
Capacity (P.S.I.G.)				Field Report No. 04365 C
Instrument Depth				
Instrument Opening				
Pressure Gradient P.S.I./Ft.				TIME DATA
Well Temperature °F.				
				Time Given / Time Computed
Initial Hydrostatic Mud A				
Initial Shut-in B				Mins. / Mins.
Initial Flow C				Mins. / Mins.
				Mins. / Mins.
				Mins. / Mins.
Final Flow D				Mins. / Mins.
Final Shut-in E				Mins. / Mins.
Final Hydrostatic Mud F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

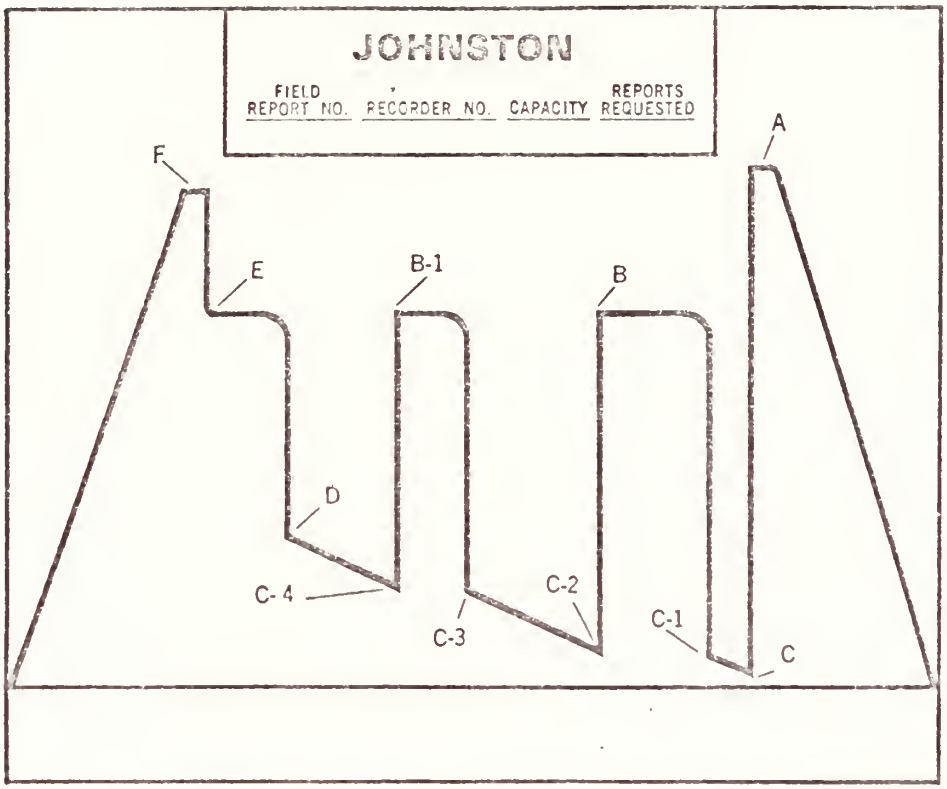
Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
110	163.9							
15 111	163.9							
2	176.9							
4	189.4							
6	201.8							
8	214.3							
10	226.7							
12	238.9							
14	249.3							
16	250.5							
18	251.0							
20	251.0							
16 22	251.0							
24	253.3							
26	277.0							
28	300.8							
30	322.8							
32	344.9							
34	367.0							
36	391.3							
38	391.3							
40	391.3							
17 42	391.3							
44	390.7							
46	389.0							
48	387.3							
50	386.2							
51	386.2							
18 52	386.2							

JOHNSTON
...found a better way

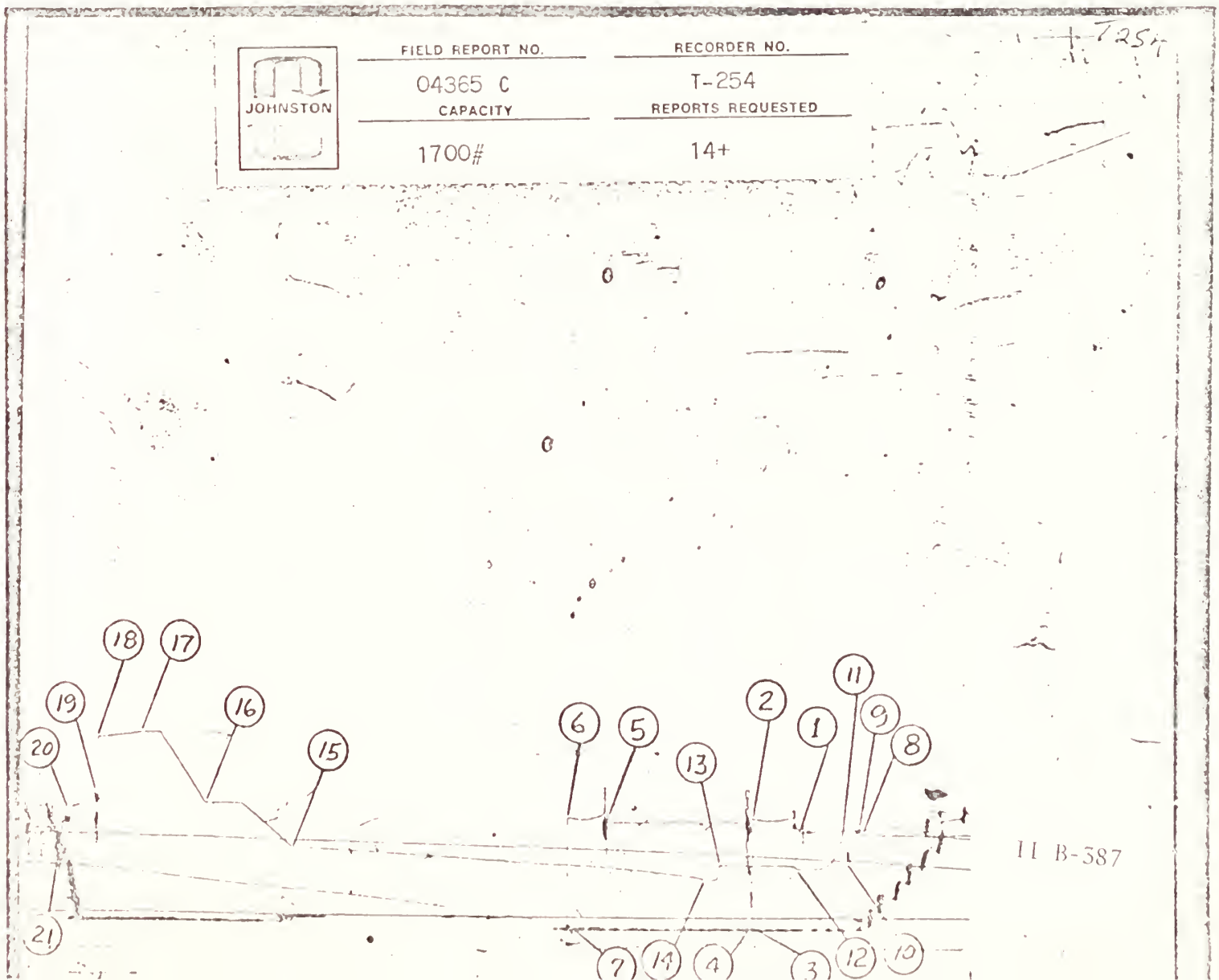
GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

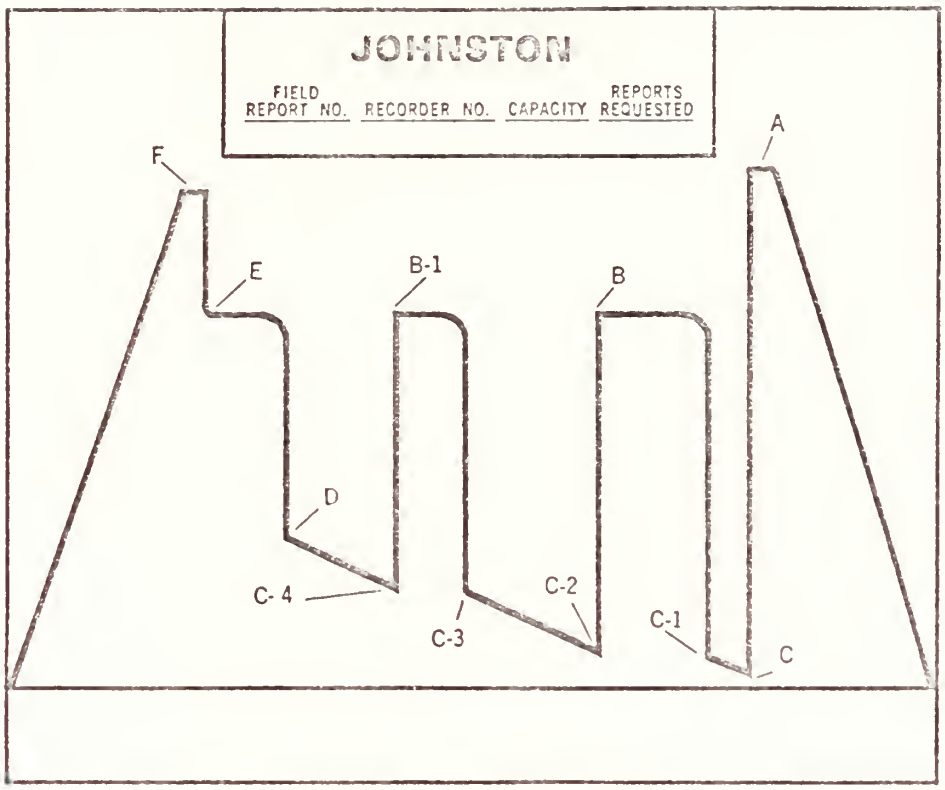
The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.



JOHNSTON
...found a better way

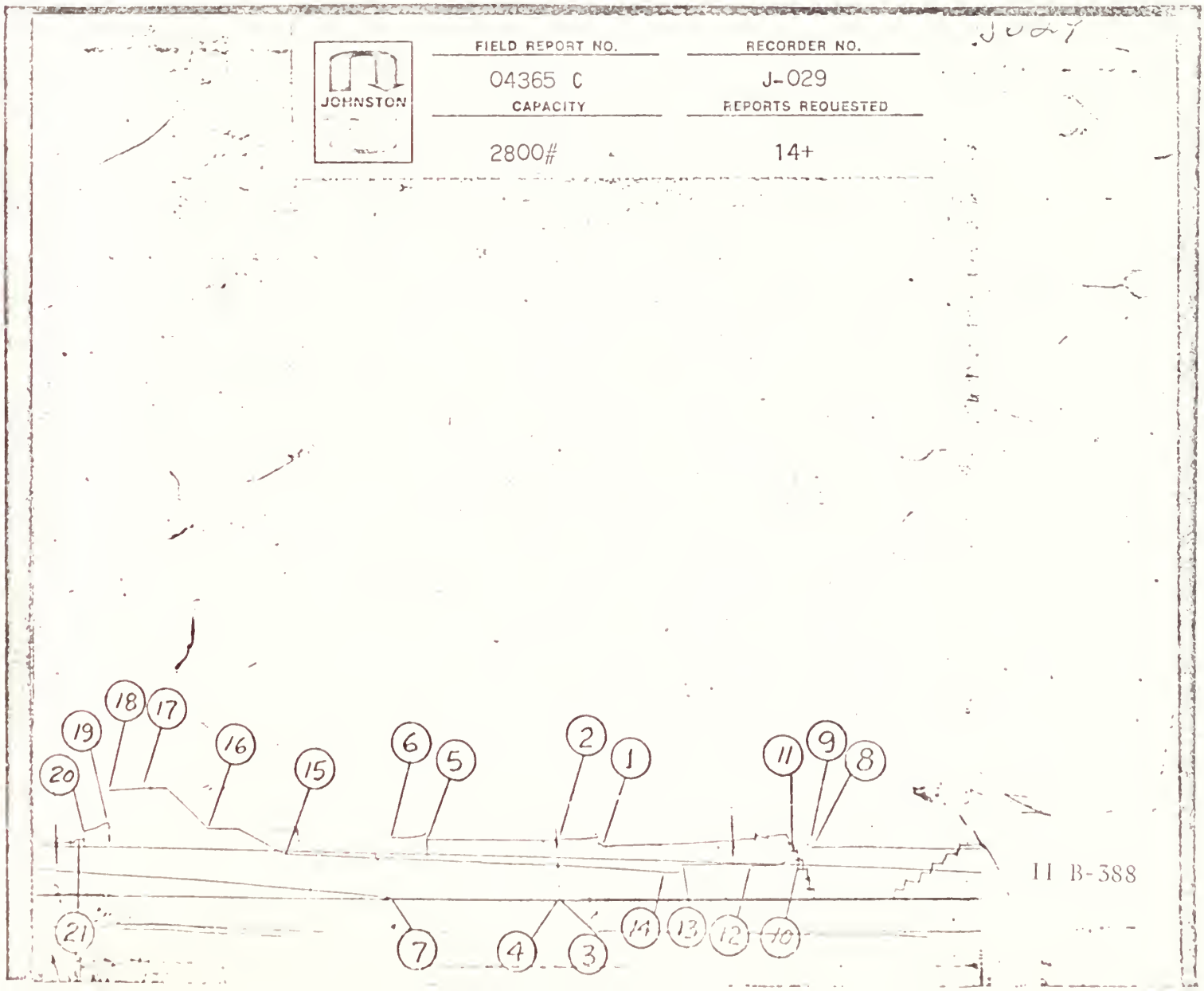
GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

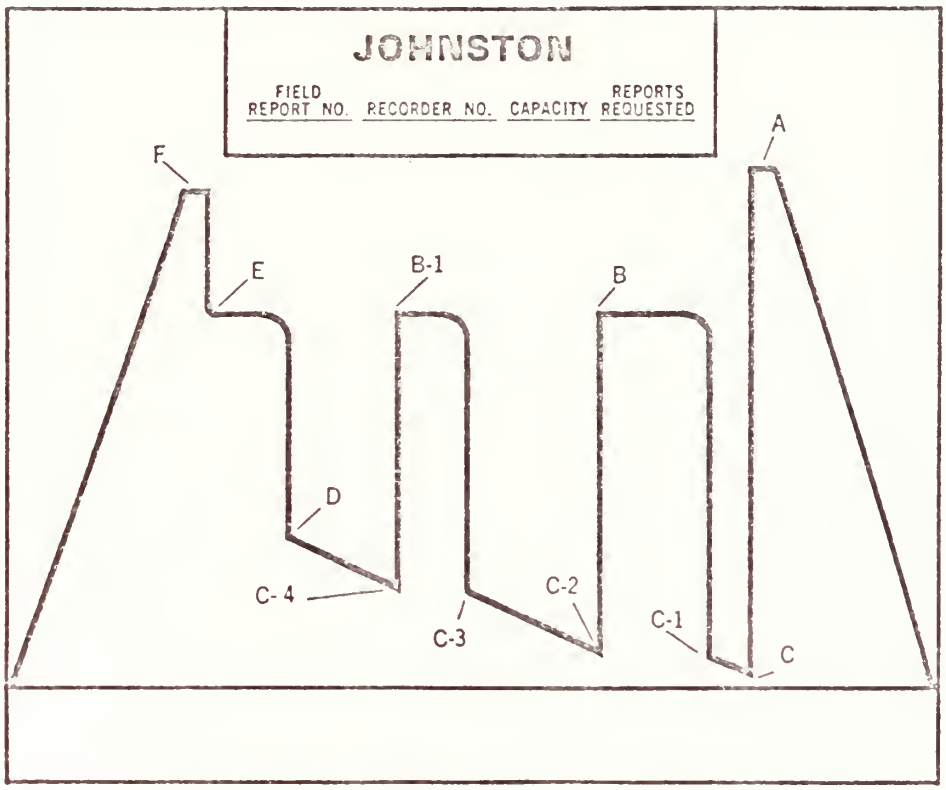
A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.



II B-388

JOHNSTON
...found a better way

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

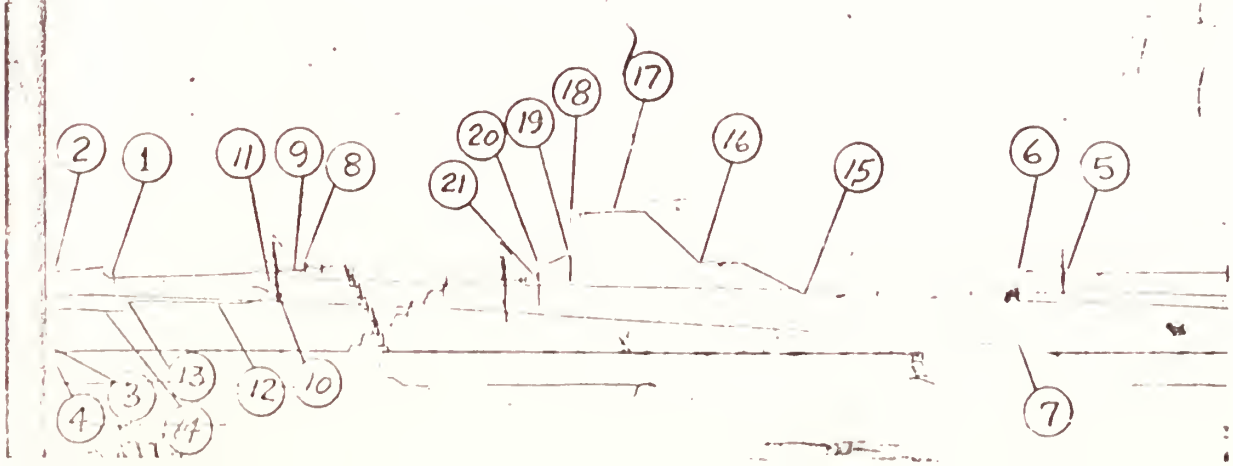
The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.

J 405

JOHNSTON

FIELD REPORT NO.	RECORDER NO.
04365 C	J-405
CAPACITY	REPORTS REQUESTED
2800#	14+



II B-589

JOB NUMBER
SPG-11210-B

DATE OF JOB
11-14-74 TO 11-15-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

PREPARED FOR

ATLANTIC RICHFIELD COMPANY

WELL NUMBER	FEDERAL SG-17
FIELD/LEASE	SORGHUM GULCH
COUNTY/PARISH	RIO BLANCO
STATE	COLORADO
TYPE OF TEST	DRILL STEM
REFERENCE ELEV	GROUND LEVEL

ADDITIONAL INFORMATION

USED GAUGE NO. 212 WITH 1000 LB. ELEMENT

GAUGE TEST DEPTH IS 964.55 FEET

GROUND LEVEL REFERENCE IS 7036 FEET

TESTED 919 FEET TO 970 FEET

II B-390

93 POINTS REPORTED THIS JOB

JOB NUMBER
SPG-11210-B

DATE OF JOB
11-14-74 TO 11-15-74

GAUGE/RUN NUMBER
196 RUN NO. 2 DST NO. 5

DATE OF RUN
11-18-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
0.000	15.161	15	01	NOV 14,1974	SHUT IN
.017	174.548	15	02	NOV 14,1974	
.033	185.906	15	03	NOV 14,1974	
.050	184.389	15	04	NOV 14,1974	
.067	186.689	15	05	NOV 14,1974	
.083	187.068	15	06	NOV 14,1974	
.100	186.357	15	07	NOV 14,1974	
.117	186.143	15	08	NOV 14,1974	
.133	186.357	15	09	NOV 14,1974	
.150	186.736	15	10	NOV 14,1974	
.167	184.223	15	11	NOV 14,1974	
.183	182.990	15	12	NOV 14,1974	
.200	182.824	15	13	NOV 14,1974	
.217	182.681	15	14	NOV 14,1974	
.233	182.587	15	15	NOV 14,1974	
.250	182.421	15	16	NOV 14,1974	
.317	182.326	15	20	NOV 14,1974	
.417	182.326	15	26	NOV 14,1974	
.433	182.255	15	27	NOV 14,1974	
.667	182.278	15	41	NOV 14,1974	END SHUT IN

20 POINTS REPORTED THIS RUN

JOB NUMBER
SPG-11210-B

DATE OF JOB
11-14-74 TO 11-15-74

GAUGE/RUN NUMBER
196 RUN NO. 2 DST NO. 5

DATE OF RUN
11-18-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
0.000	21.207	15 45	NOV 14,1974	START FLOW
.017	42.002	15 46	NOV 14,1974	
.033	43.211	15 47	NOV 14,1974	
.050	44.255	15 48	NOV 14,1974	
.067	45.369	15 49	NOV 14,1974	
.084	46.246	15 50	NOV 14,1974	
.100	47.456	15 51	NOV 14,1974	
.117	48.570	15 52	NOV 14,1974	
.134	49.613	15 53	NOV 14,1974	
.150	50.704	15 54	NOV 14,1974	
.167	51.747	15 55	NOV 14,1974	
.184	52.743	15 56	NOV 14,1974	
.200	53.810	15 57	NOV 14,1974	
.217	54.806	15 58	NOV 14,1974	
.234	55.802	15 59	NOV 14,1974	
.251	56.798	16 00	NOV 14,1974	
.267	57.794	16 01	NOV 14,1974	
.284	58.387	16 02	NOV 14,1974	
.301	59.122	16 03	NOV 14,1974	
.317	60.070	16 04	NOV 14,1974	
.334	60.995	16 05	NOV 14,1974	
.367	62.987	16 07	NOV 14,1974	
.401	64.765	16 09	NOV 14,1974	
.434	66.425	16 11	NOV 14,1974	
.468	68.203	16 13	NOV 14,1974	
.501	70.076	16 15	NOV 14,1974	
.568	73.609	16 19	NOV 14,1974	
.635	77.261	16 23	NOV 14,1974	
.702	80.794	16 27	NOV 14,1974	
.768	84.161	16 31	NOV 14,1974	
.835	87.196	16 35	NOV 14,1974	
.902	90.278	16 39	NOV 14,1974	
.969	93.408	16 43	NOV 14,1974	
1.036	96.348	16 47	NOV 14,1974	
1.102	98.767	16 51	NOV 14,1974	
1.169	101.257	16 55	NOV 14,1974	
1.236	103.770	16 59	NOV 14,1974	
1.303	106.236	17 03	NOV 14,1974	
1.370	108.678	17 07	NOV 14,1974	
1.437	111.168	17 11	NOV 14,1974	

JOB NUMBER
SPG-11210-B

DATE OF JO
11-14-74 TO 11-15-7

GAUGE/RUN NUMBER
196 RUN NO. 2 DST NO. 5

DATE OF RU
11-18-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT.

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
1.503	113.990	17	15	NOV 14,1974	
1.570	116.977	17	19	NOV 14,1974	
1.637	119.680	17	23	NOV 14,1974	
1.704	122.431	17	27	NOV 14,1974	
1.771	125.537	17	31	NOV 14,1974	
1.837	128.975	17	35	NOV 14,1974	
1.904	131.987	17	39	NOV 14,1974	
1.971	135.211	17	43	NOV 14,1974	
2.038	137.416	17	47	NOV 14,1974	
2.155	141.922	17	54	NOV 14,1974	
2.222	144.293	17	58	NOV 14,1974	
2.288	146.593	18	02	NOV 14,1974	
2.355	148.490	18	06	NOV 14,1974	
2.422	150.244	18	10	NOV 14,1974	
2.489	151.951	18	14	NOV 14,1974	
2.556	153.659	18	18	NOV 14,1974	
2.623	155.390	18	22	NOV 14,1974	
2.689	156.978	18	26	NOV 14,1974	
2.823	160.203	18	34	NOV 14,1974	
2.957	163.404	18	42	NOV 14,1974	
3.090	166.818	18	50	NOV 14,1974	
3.224	170.043	18	58	NOV 14,1974	
3.358	173.932	19	06	NOV 14,1974	
3.491	175.924	19	14	NOV 14,1974	
3.625	178.342	19	22	NOV 14,1974	
3.758	180.879	19	31	NOV 14,1974	
3.892	183.345	19	39	NOV 14,1974	
4.026	185.669	19	47	NOV 14,1974	
4.159	187.518	19	55	NOV 14,1974	
4.293	189.012	20	03	NOV 14,1974	
4.427	190.316	20	11	NOV 14,1974	
4.560	191.573	20	19	NOV 14,1974	
4.694	192.925	20	27	NOV 14,1974	
4.828	194.276	20	35	NOV 14,1974	
4.961	195.485	20	43	NOV 14,1974	
5.095	196.742	20	51	NOV 14,1974	
5.228	197.880	20	59	NOV 14,1974	
5.379	199.113	21	08	NOV 14,1974	
5.512	200.299	21	16	NOV 14,1974	
5.646	201.413	21	24	NOV 14,1974	

JOB NUMBER
SPG-11210-B

DATE OF JOB
11-14-74 TO 11-15-74

GAUGE/RUN NUMBER
196 RUN NO. 2 DST NO. 5

DATE OF RUN
11-18-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
5.780	202.504	21	32	NOV 14,1974	
5.913	203.618	21	40	NOV 14,1974	
6.047	204.638	21	48	NOV 14,1974	
6.181	205.681	21	56	NOV 14,1974	
6.314	206.582	22	04	NOV 14,1974	
6.448	207.744	22	12	NOV 14,1974	
6.582	208.598	22	20	NOV 14,1974	
6.715	209.475	22	28	NOV 14,1974	
6.849	211.111	22	36	NOV 14,1974	
6.982	214.692	22	44	NOV 14,1974	
7.116	216.731	22	52	NOV 14,1974	
7.250	217.608	23	00	NOV 14,1974	
7.383	218.106	23	08	NOV 14,1974	END FLOW

93 POINTS REPORTED THIS RUN

JOB NUMBER
SPG-11210-B

DATE OF JOB
11-14-74 TO 11-15-74

GAUGE/RUN NUMBER
196 RUN NO. 2 DST NO. 5

DATE OF RUN
11-18-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
0.000	218.106	23	08	NOV 14,1974	START AIR
.017	228.824	23	09	NOV 14,1974	INJECTION
.033	206.748	23	10	NOV 14,1974	
.050	185.503	23	11	NOV 14,1974	
.066	175.497	23	12	NOV 14,1974	
.083	193.731	23	13	NOV 14,1974	
.100	200.014	23	14	NOV 14,1974	
.116	202.172	23	15	NOV 14,1974	
.133	187.827	23	16	NOV 14,1974	
.149	167.127	23	17	NOV 14,1974	
.166	161.389	23	18	NOV 14,1974	
.182	154.821	23	19	NOV 14,1974	
.199	151.714	23	20	NOV 14,1974	
.216	150.268	23	21	NOV 14,1974	
.232	150.078	23	22	NOV 14,1974	
.249	149.936	23	23	NOV 14,1974	
.315	150.007	23	27	NOV 14,1974	
.332	156.125	23	28	NOV 14,1974	
.348	158.235	23	29	NOV 14,1974	
.365	158.804	23	30	NOV 14,1974	
.381	158.662	23	31	NOV 14,1974	
.398	158.306	23	32	NOV 14,1974	
.415	158.045	23	33	NOV 14,1974	
.531	157.690	23	40	NOV 14,1974	
.663	156.812	23	48	NOV 14,1974	
.680	135.211	23	49	NOV 14,1974	
.697	128.311	23	50	NOV 14,1974	END AIR
.713	128.359	23	51	NOV 14,1974	INJECTION
.730	129.449	23	52	NOV 14,1974	
.746	131.014	23	53	NOV 14,1974	
.763	133.457	23	54	NOV 14,1974	
.779	134.879	23	55	NOV 14,1974	
.796	136.017	23	56	NOV 14,1974	
.813	136.847	23	57	NOV 14,1974	
.829	137.748	23	58	NOV 14,1974	
.846	138.555	23	59	NOV 14,1974	
.862	139.432	00	00	NOV 15,1974	
.879	140.238	00	01	NOV 15,1974	
1.012	146.759	00	09	NOV 15,1974	
1.144	151.833	00	17	NOV 15,1974	

JOB NUMBER
SPG-11210-B

DATE OF JOB
11-14-74 TO 11-15-74

GAUGE/RUN NUMBER
196 RUN NO. 2 DST NO. 5

DATE OF RUN
11-18-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
1.277	155.461	00 25	NOV 15,1974	
1.410	157.879	00 33	NOV 15,1974	
1.542	160.891	00 41	NOV 15,1974	
1.675	164.732	00 49	NOV 15,1974	
1.808	168.644	00 56	NOV 15,1974	
1.940	172.462	01 04	NOV 15,1974	
2.073	175.758	01 12	NOV 15,1974	
2.206	178.793	01 20	NOV 15,1974	
2.338	181.757	01 28	NOV 15,1974	
2.471	184.151	01 36	NOV 15,1974	
2.488	189.913	01 37	NOV 15,1974	START 5 GAL.
2.504	196.007	01 38	NOV 15,1974	MIN. INJECTION
2.521	202.267	01 39	NOV 15,1974	
2.537	208.906	01 40	NOV 15,1974	
2.554	215.308	01 41	NOV 15,1974	
2.571	221.758	01 42	NOV 15,1974	
2.587	228.089	01 43	NOV 15,1974	
2.604	234.254	01 44	NOV 15,1974	
2.620	240.300	01 45	NOV 15,1974	
2.637	246.323	01 46	NOV 15,1974	
2.653	252.013	01 47	NOV 15,1974	
2.670	258.131	01 48	NOV 15,1974	
2.687	263.727	01 49	NOV 15,1974	
2.703	270.081	01 50	NOV 15,1974	
2.720	272.405	01 51	NOV 15,1974	
2.736	272.500	01 52	NOV 15,1974	
2.753	272.595	01 53	NOV 15,1974	END 5 GAL.
2.770	272.547	01 54	NOV 15,1974	MIN. INJECTION
2.786	272.358	01 55	NOV 15,1974	
2.803	271.860	01 56	NOV 15,1974	
2.819	271.812	01 57	NOV 15,1974	
2.836	271.457	01 58	NOV 15,1974	
2.852	271.528	01 59	NOV 15,1974	
2.869	271.077	02 00	NOV 15,1974	
2.886	279.400	02 01	NOV 15,1974	START 10 GAL.
2.902	290.544	02 02	NOV 15,1974	MIN. INJECTION
2.919	302.803	02 03	NOV 15,1974	
2.935	312.999	02 04	NOV 15,1974	
2.952	326.348	02 05	NOV 15,1974	
2.969	336.449	02 06	NOV 15,1974	

JOB NUMBER
SPG-11210-B

DATE OF JOB
11-14-74 TO 11-15-74

GAUGE/RUN NUMBER
196 RUN NO. 2 DST NO. 5

DATE OF RUN
11-18-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
2.985	349.301	02	07	NOV 15,1974	
3.002	360.825	02	08	NOV 15,1974	
3.018	371.827	02	09	NOV 15,1974	
3.035	383.113	02	10	NOV 15,1974	
3.051	393.712	02	11	NOV 15,1974	
3.068	405.900	02	12	NOV 15,1974	
3.085	409.575	02	13	NOV 15,1974	
3.101	409.599	02	14	NOV 15,1974	END 10 GAL.
3.118	408.319	02	15	NOV 15,1974	MIN. INJECTION
3.134	406.943	02	16	NOV 15,1974	
3.151	405.781	02	17	NOV 15,1974	
3.168	404.477	02	18	NOV 15,1974	
3.184	403.339	02	19	NOV 15,1974	
3.201	402.272	02	20	NOV 15,1974	
3.217	401.656	02	21	NOV 15,1974	
3.234	400.683	02	22	NOV 15,1974	
3.250	400.067	02	23	NOV 15,1974	
3.267	399.261	02	24	NOV 15,1974	
3.284	398.573	02	25	NOV 15,1974	
3.300	397.814	02	26	NOV 15,1974	
3.317	396.890	02	27	NOV 15,1974	
3.333	396.060	02	28	NOV 15,1974	
3.350	395.420	02	29	NOV 15,1974	END TEST

103 POINTS REPORTED THIS RUN

JOB NUMBER
SPG-11210-B

DATE OF JO
11-14-74 TO 11-15-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

PREPARED FOR

ATLANTIC RICHFIELD COMPANY

WELL NUMBER	FEDERAL SG-17
FIELD/LEASE	SORGHUM GULCH
COUNTY/PARISH	RIO BLANCO
STATE	COLORADO
TYPE OF TEST	DRILL STEM
REFERENCE ELEV	GROUND LEVEL

ADDITIONAL INFORMATION

USED GAUGE NO. 204 WITH 1000 LB. ELEMENT

GAUGE TEST DEPTH IS 875.49 FEET

GAUGE IS IN ANNULUS WITH PACKER SET AT 919 FEET

18 POINTS REPORTED THIS JOB

JOB NUMBER
SPG-11210-B

DATE OF JO
11-14-74 TO 11-15-7

GAUGE/RUN NUMBER
204 RUN NO. 2 DST NO. 5

DATE OF RU
11-18-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
0.000	165.775	15 05	NOV 14,1974	INIT. HYDRO.
.567	189.366	15 39	NOV 14,1974	
1.567	189.275	16 39	NOV 14,1974	
2.567	189.549	17 39	NOV 14,1974	
3.567	189.823	18 39	NOV 14,1974	
4.567	190.166	19 39	NOV 14,1974	
5.567	190.486	20 39	NOV 14,1974	
6.567	190.783	21 39	NOV 14,1974	
7.567	191.080	22 39	NOV 14,1974	
8.567	191.560	23 39	NOV 14,1974	
9.567	191.538	00 39	NOV 15,1974	
10.567	191.743	01 39	NOV 15,1974	
11.567	192.109	02 39	NOV 15,1974	
11.617	192.178	02 42	NOV 15,1974	
11.633	192.521	02 43	NOV 15,1974	
11.650	192.909	02 44	NOV 15,1974	
12.000	192.452	03 05	NOV 15,1974	
12.350	179.833	03 26	NOV 15,1974	FINAL HYDRO.

18 POINTS REPORTED THIS RUN

PRESSURE GAUGE DRILL STEM TEST SHEET

Job No. SPG-11210-B Date 11-14-74 Run 2 DST #5 Office CASPER

Customer ARCO ETAL Location TRACT C-b PICEANCE CREEK BASIN

State COLORADO County/Parish RIO BLANCO

Well FEDERAL SG No. 17 Field SORGHUM GULCH

USE MILITARY TIME FOR ALL TIMES

	Time	Date	Time	Date	Time Charged
Arrive: Well/Dock	1. 1000	11-14-74	2.		
Depart: Well/Dock	1. 0600	11-15-74	2.		Hrs.
Gauge Start in Hole	1. 1320	11-14-74	2.		
Gauge Out of Hole	1. 0525	11-15-74	2.		Hrs.

FROM RIFLE

No. Trips 1 Miles 45 Total Mileage 90 ft. trip

Top Gauge # 204 Element # 32761 Range 1000 Time Mode 1 MIN.

Btm. Gauge # 196 Element # 30951 Range 1000 Time Mode 1 MIN.

Type Tool JOHNSON LIFE Test Depth 919-970 Zero Point GROUND LEVEL

Packer Depth 919 ANCHOR Tail Pipe Depth 970 Top Gauge Depth 875.47

Bottom Hole Temp. 84°F Atmos. Temp. 62°F Bottom Gauge Depth 964.55

TAGGED BOTTOM EARLIER

TIME INFORMATION

	Time	Date
On Bottom	1450	11-14-74
Packer Set	1451	11-14-74
Initial Open	1501-1502	11-14-74
Initial Shut-In	1509-1541	11-14-74
REOPEN 1541-1551		
Start Flow	1551	11-14-74
Final Shut-In		
Packer Unseated	0234	11-15-74

PRESSURE INFORMATION

Initial Hydrostatic Mud	INJECTED 5 GAL/MIN FROM 0137 TO 0155
Initial Draw Down	DRAW DOWN 0155-0205
Initial Build-Up	INJECTED 10 GAL/MIN 0205 TO 0219
Final Flow	DRAW DOWN 0219-0234
Final Build-Up	
Final Hydrostatic Mud	
Mud Weight	

TIME OF SURFACE NULLS

	11-14-74	11-15-74			11-14-74	11-15-74
Top Gauge	1252	0448		Bottom Gauge	1150	0525

Remarks GROUND LEVEL IS 9.0 FT. BELOW ROTARY TABLE WAIT ON JOHNSON. ON BOTTOM TIMES FROM DRILLING RECORDER. START JET 2308. 320 MINUTE RISE. ELEV. AT GL=7036

SP-423

II B-400

Carl Kirsch Jr.
Operator

COMPANY ATLANTIC RICHFIELD COMPANY WELL FEDERAL S-G #17 TEST NO. 6 COUNTY RIO BLANCO STATE COLORADO

JOHNSTON

Schlumberger

technical report

II B-401

F.R. #06017 C

JOHNSTON

PRESSURE LOG*

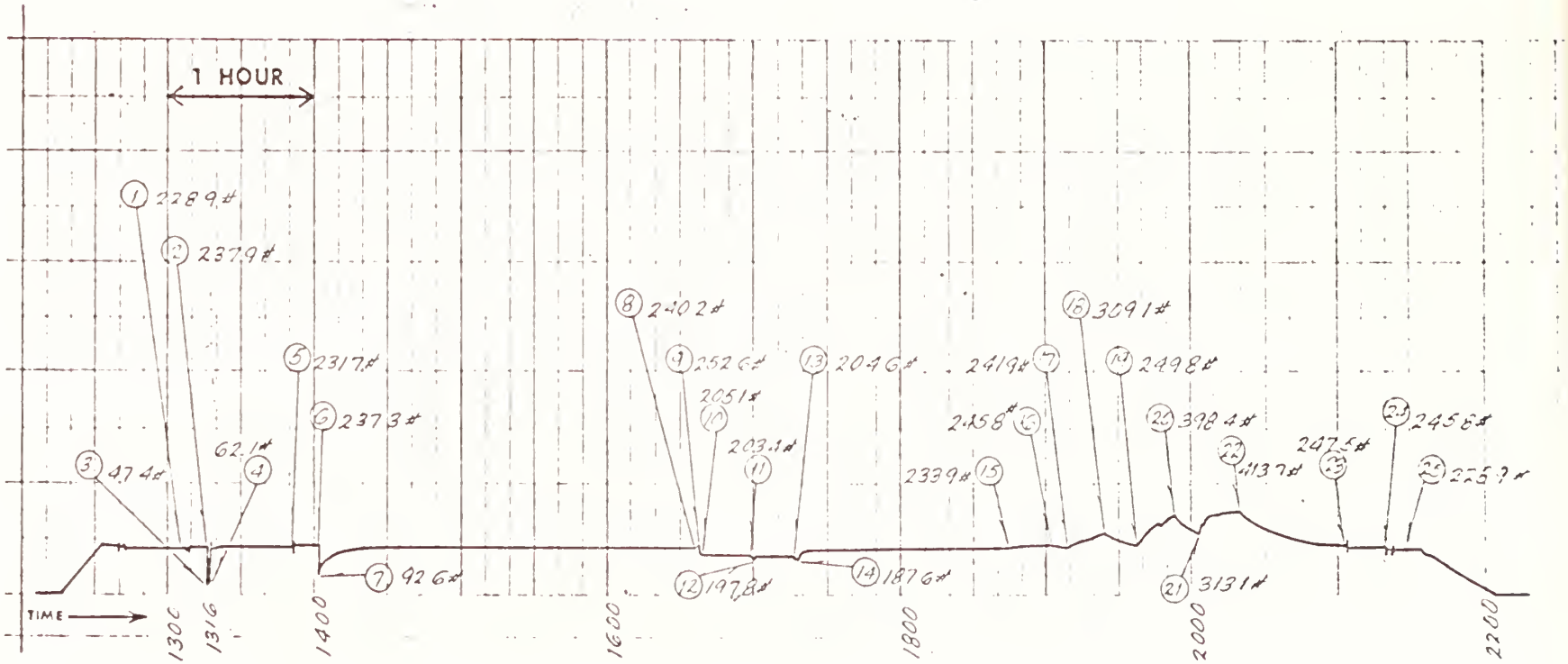
Field Report No. 06017 C

Instrument Number J-405

Capacity 2800 p.s.i.

Depth 985 ft.

*a continuous tracing of the original chart



JOHNSTON
...found a better way

SURFACE INFORMATION

Description (Rate of Flow)	Time	Pressure (P.S.I.G.)	Surface Choke
Opened Tool	1316	-	-
CLOSED FOR INITIAL SHUT-IN	1322	-	-
FINISHED SHUT-IN	1352	-	-
RE-OPENED TOOL	1402	-	-
INJECTING AIR	1634	-	-
STOPPED INJECTING AIR	1717	-	-
STARTED INJECTING WATER 5 GAL./MIN.	1834	-	-
STOPPED INJECTING WATER	1849	-	-
STARTED INJECTING WATER 10 GAL./MIN.	1903	-	-
STOPPED INJECTING WATER	1914	-	-
STARTED INJECTING WATER 20 GAL./MIN.	1929	-	-
STOPPED INJECTING WATER	1944	-	-
STARTED INJECTING FILL-UP	1954	-	-
STOPPED INJECTING FILL-UP	2011	-	-
FILLED ANNULUS	2021	-	-
STOPPED FILLING ANNULUS	2036	-	-
CLOSED FOR FINAL SHUT-IN	2103	-	-
PULLED PACKER LOOSE	2120	-	-

Cushion Type	Amount	Pressure	Bottom Choke
	-		Size 3/4"

MUD DATA

Mud Type WATER FOAM Wt. -
Viscosity - Water Loss - C.C.
Resist: of Mud - @ - °F; of Filtrate - @ - °F
Chloride Content - PPM

EQUIPMENT & HOLE DATA

Type Test M.F.E. OPEN HOLE
Formation Tested -
Elevation - Ft.
Net Productive Interval - Ft.
Estimated Porosity - %
All Depths Measured From -
Total Depth 1017 Ft.
Main Hole/Casing Size -
Rat Hole/Liner Size -
Drill Collar Length 326' I.D. -
Drill Pipe Length 505' I.D. -
Packer Depth(s) 961 & 967 Ft.

MULTI-FLOW EVALUATOR FLUID SAMPLE DATA

Sampler Pressure P.S.I.G. at Surface
Recovery: Cu. Ft. Gas
cc. Oil
cc. Water
cc. Mud
Tot. Liquid cc.
Gravity °API @ °F.
Gas/Oil Ratio cu. ft./bbl.

	Resistivity	Chloride Content
Recovery Water	@ °F.	ppm
Recovery Mud	@ °F.	
Recovery Mud Filtrate	@ °F.	ppm
Mud Pit Sample	@ °F.	
Mud Pit Sample Filtrate	@ °F.	ppm

RECOVERY DESCRIPTION	FEET	BARRELS	% OIL	% WATER	% OTHERS	API GRAVITY	RESISTIVITY	CHL. PPM
-						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	

Remarks:

Address 1500 SECURITY LIFE BUILDING, 1616 GLENARM; DENVER, COLORADO 80202

Company ATLANTIC RICHFIELD COMPANY Field SORGHUM GULCH
Well FEDERAL S-G #17 Location SEC. 16-3s-96w
Test Interval 967' TO 1017' Test # 6 II B-403 Date 11-16-74

County RIO BLANCO State COLORADO Field Report No. 06017 C
Technician TAYLOR (VERNAL) Test Approved By MR. JERRY L. BUSSELL No. Reports Requested 14 (13x)

JOHNSTON
...found a better way

PRESSURE DATA

Instrument No.	J-029			
Capacity (P.S.I.G.)	2800			Field Report No. 06017 C
Instrument Depth	944'			
Instrument Opening	INSIDE			
Pressure Gradient P.S.I./Ft.				TIME DATA
Well Temperature °F.	87			

		Time Given	Time Computed
Initial Hydrostatic Mud	A		
Initial Shut-in	B	Mins.	Mins.
Initial Flow	C	Mins.	Mins.
		Mins.	Mins.
		Mins.	Mins.
Final Flow	D	Mins.	Mins.
Final Shut-in	E	Mins.	Mins.
Final Hydrostatic Mud	F		

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

POINTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
1	215.6		4 0	44.5		13	219.0	
2	225.8		2	219.6		14	219.6	
3	27.5		4	221.3		15	219.6	
4	44.5		6	221.3		16	220.1	
5	221.3		8	221.3		17	220.1	
6	225.8		10	221.3		18	220.1	
7	75.7		12	221.3		19	220.1	
8	225.2		14	221.3		20	220.7	
9	237.7		16	221.3		30	221.8	
10	187.3		18	221.3		40	222.4	
11	186.1		20	221.3		50	223.0	
12	179.3		22	221.3		60	223.0	
13	189.5		24	221.3		70	223.0	
14	170.3		26	221.3		80	223.0	
15	222.4		28	221.3		90	224.1	
16	232.6		30	221.3		100	224.1	
17	227.5		32	221.3		110	224.1	
18	297.7		34	221.3		120	224.1	
19	236.6		5 35	221.3		130	224.1	
20	386.1		7 0	75.7		140	225.2	
21	298.3		1	118.7		150	225.2	
22	399.2		2	150.5		8 153	225.2	
23	229.8		3	165.8		9 1	237.7	
24	228.6		4	179.3		10 2	187.3	
25	211.1		5	189.5		4	186.1	
			6	197.5		6	186.1	
			7	204.3		8	186.1	
			8	209.4		10	186.1	
			9	212.8		12	186.1	
			10	215.6		14	186.1	
			11	217.3		16	186.1	
			12	218.4				

II B-404

CONTINUED

JOHNSTON
...found a better way

PRESSURE DATA

Instrument No.	J-029			
Capacity (P.S.I.G.)				Field Report No. 06017 C
Instrument Depth				
Instrument Opening				
Pressure Gradient P.S.I./Ft.				TIME DATA
Well Temperature °F.				
				Time Given / Time Computed
Initial Hydrostatic Mud A				
Initial Shut-in B				Mins. / Mins.
Initial Flow C				Mins. / Mins.
				Mins. / Mins.
				Mins. / Mins.
Final Flow D				Mins. / Mins.
Final Shut-in E				Mins. / Mins.
Final Hydrostatic Mud F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
18	186.1		80	222.4		60	326.1	
20	186.1		15 86	222.4		62	344.2	
22	186.1		2	228.6		64	349.9	
11 24	186.1		4	230.9		66	370.3	
12 25	179.3		6	232.0		68	386.1	
26	182.2		8	232.6		20 69	386.1	
28	189.5		10	232.6		70	367.4	
30	189.5		12	232.6		72	345.9	
32	189.5		14	232.6		74	328.3	
34	189.5		16	232.6		76	331.2	
36	189.5		16 18	232.6		78	300.0	
38	189.5		20	228.6		21 79	298.3	
40	189.5		22	228.1		80	337.4	
13 41	189.5		24	227.5		82	377.1	
42	187.8		17 25	227.5		84	390.7	
14 43	170.3		26	237.7		86	392.9	
1	186.1		28	251.3		88	395.8	
2	201.4		30	259.8		90	398.0	
3	206.5		32	267.7		92	399.2	
4	210.5		34	275.7		94	399.2	
5	213.9		36	285.9		22 95	399.2	
6	216.2		38	296.6		96	378.2	
7	217.9		18 40	297.7		98	358.9	
8	219.0		42	274.0		100	341.9	
9	219.6		44	261.5		102	326.6	
10	220.1		46	253.0		104	313.6	
20	220.7		48	246.8		106	301.7	
30	220.7		50	241.7		108	291.5	
40	222.4		52	238.3		110	282.5	
50	222.4		19 54	236.6		112	274.0	
60	222.4		56	274.5		114	266.6	
70	222.4		58	303.4		CONTINUED		

II B-405

JOHNSTON ...found a better way

PRESSURE DATA

Instrument No.		J-029			Field Report No. 06017 C
Capacity (P.S.I.G.)					
Instrument Depth					
Instrument Opening					
Pressure Gradient P.S.I./Ft.					TIME DATA
Well Temperature °F.					
					Time Given / Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
116	260.9							
118	255.8							
120	251.3							
122	247.3							
124	243.9							
126	241.1							
128	238.8							
130	236.6							
132	234.9							
134	233.7							
136	232.6							
138	231.5							
23 139	229.8							
140	228.6							
142	228.6							
144	228.6							
146	228.6							
148	228.6							
150	228.6							
152	228.6							
154	228.6							
24 156	228.6							

JOHNSTON
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PRESSURE DATA

Instrument No.		J-405			Field Report No. 06017 C
Capacity (P.S.I.G.)		2800			
Instrument Depth		985'			
Instrument Opening		OUTSIDE			
Pressure Gradient P.S.I./Ft.					TIME DATA
Well Temperature °F.		87			
					Time Given / Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

POINTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
1	228.9		4 0	62.1		13	231.1	
2	237.9		2	229.4		14	231.7	
3	47.4		4	230.5		15	232.2	
4	62.1		6	230.5		16	232.2	
5	231.7		8	230.5		17	232.8	
6	237.3		10	230.5		18	232.8	
7	92.6		12	230.5		19	233.4	
8	240.2		14	230.5		20	233.4	
9	252.6		16	230.5		30	233.9	
10	205.1		18	230.5		40	234.5	
11	203.4		20	230.5		50	235.1	
12	197.8		22	230.5		60	235.1	
13	204.6		24	230.5		70	235.6	
14	187.6		26	231.1		80	235.6	
15	233.9		28	231.1		90	236.2	
16	245.8		30	231.1		100	236.8	
17	241.9		32	231.7		110	237.3	
18	309.1		34	231.7		120	238.5	
19	249.8		5 35	231.7		130	239.6	
20	398.4		7 0	92.6		140	240.2	
21	313.1		1	131.6		150	240.2	
22	413.7		2	161.6		8 153	240.2	
23	247.5		3	176.9		9 1	252.6	
24	245.8		4	189.9		10 2	205.1	
25	228.9		5	200.0		4	203.4	
			6	208.5		6	203.4	
			7	214.7		8	203.4	
			8	220.4	II B-407	10	203.4	
			9	223.8		12	203.4	
			10	226.6		14	203.4	
			11	228.9		16	203.4	
			12	230.0		CONTINUED		

JOHNSTON
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PRESSURE DATA

Instrument No.	J-405			
Capacity (P.S.I.G.)				Field Report No. 06017 C
Instrument Depth				
Instrument Opening				
Pressure Gradient P.S.I./Ft.				TIME DATA
Well Temperature °F.				
				Time Given / Time Computed
Initial Hydrostatic Mud A				
Initial Shut-in B				Mins. / Mins.
Initial Flow C				Mins. / Mins.
				Mins. / Mins.
				Mins. / Mins.
Final Flow D				Mins. / Mins.
Final Shut-in E				Mins. / Mins.
Final Hydrostatic Mud F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
18	203.4		80	233.9		60	334.0	
20	203.4		15 86	233.9		62	353.2	
22	203.4		2	240.2		64	356.0	
11 24	203.4		4	242.4		66	375.2	
12 25	197.8		6	243.5		68	392.2	
26	203.4		8	244.7		20 69	398.4	
28	205.1		10	244.7		70	393.3	
30	205.1		12	245.2		72	368.5	
32	205.1		14	245.8		74	348.7	
34	205.1		16	245.8		76	332.9	
36	204.6		16 18	245.8		78	319.9	
38	204.6		20	243.0		21 79	313.1	
40	204.6		22	242.4		80	339.6	
13 41	204.6		24	241.9		82	373.5	
42	187.6		17 25	241.9		84	399.5	
14 43	187.6		26	246.4		86	405.8	
1	209.1		28	261.1		88	407.5	
2	217.0		30	270.1		90	412.0	
3	221.5		32	278.0		92	413.1	
4	225.5		35	285.4		94	413.7	
5	228.3		36	293.9		22 95	413.7	
6	230.5		38	305.2		96	402.4	
7	231.1		18 40	309.1		98	382.6	
8	232.2		42	291.0		100	363.9	
9	232.8		44	278.6		102	347.5	
10	232.8		46	269.0		104	334.0	
20	232.8		48	261.6		106	321.5	
30	233.4		50	256.0	II B-408	108	310.8	
40	233.9		52	252.0		110	300.6	
50	233.9		19 54	249.8		112	292.7	
60	233.9		56	279.2		114	285.4	
70	233.9		58	311.4		CONTINUED		

JOHNSTON ...found a better way

PRESSURE DATA

Instrument No.	J-405			
Capacity (P.S.I.G.)				
Instrument Depth				
Instrument Opening				
Pressure Gradient P.S.I./Ft.				
Well Temperature °F.				
Initial Hydrostatic Mud A				
Initial Shut-in B				
Initial Flow C				
Final Flow D				
Final Shut-in E				
Final Hydrostatic Mud F				

Field Report No. 06017 C

TIME DATA

Time Given	Time Computed
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.

Remarks:

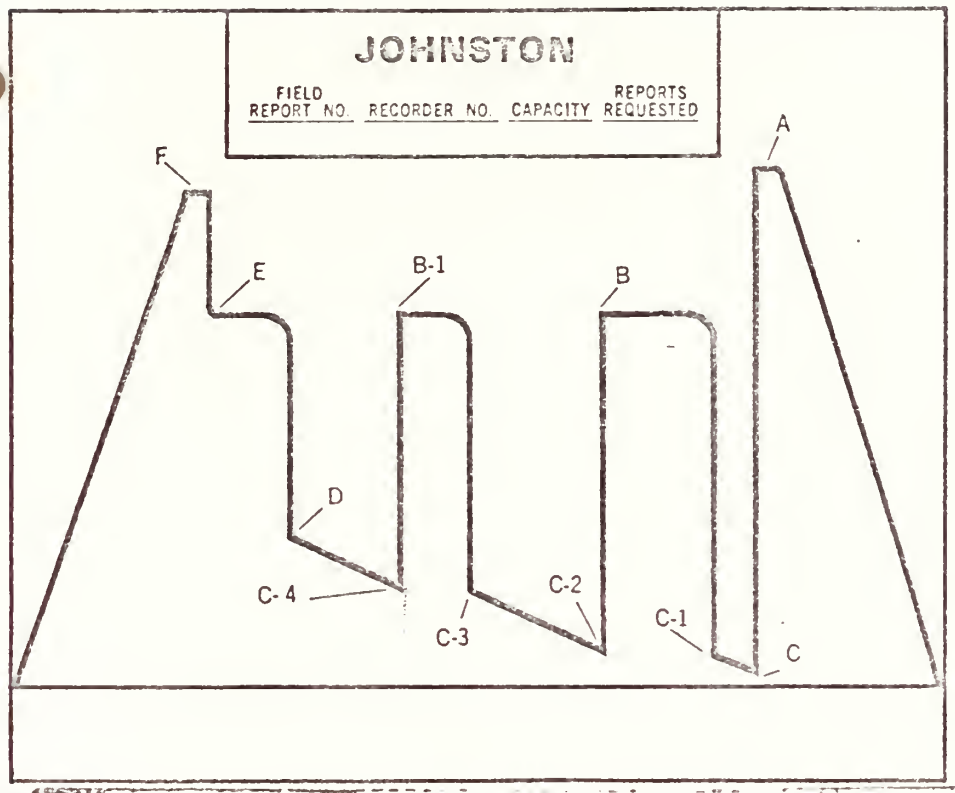
*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point	Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point	Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point	Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
	116	279.2									
	118	273.5									
	120	269.0									
	122	265.0									
	124	261.6									
	126	258.8									
	128	256.0									
	130	253.7									
	132	252.6									
	134	250.3									
	136	249.2									
	138	248.1									
23	139	247.5									
	140	245.8									
	142	245.8									
	144	245.8									
	146	245.8									
	148	245.8									
	150	245.8									
	152	245.8									
	154	245.8									
24	156	245.8									

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

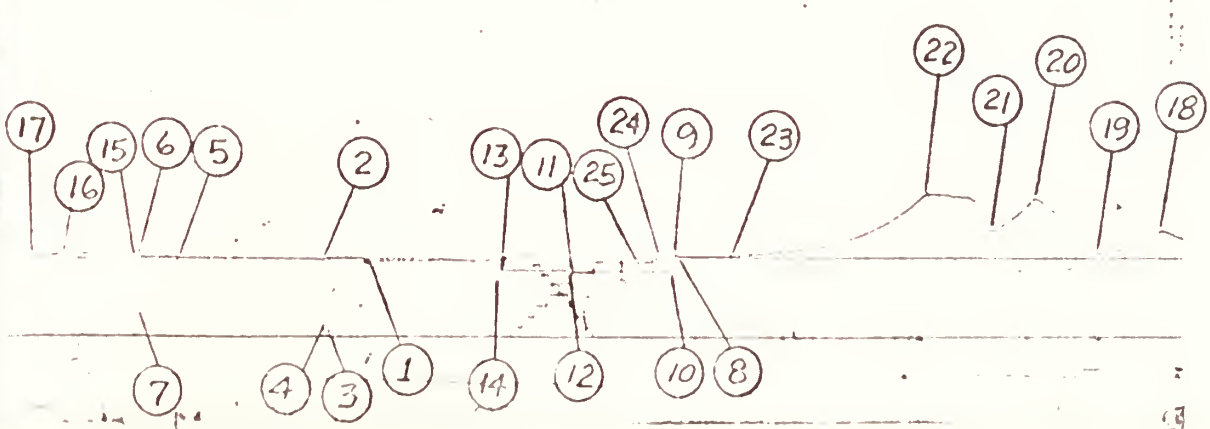
The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.

JOHNSTON

FIELD REPORT NO.	RECORDER NO.
06017 C	J-029
CAPACITY	REPORTS REQUESTED
2800#	14+

J029



II B-410

JOHNSTON
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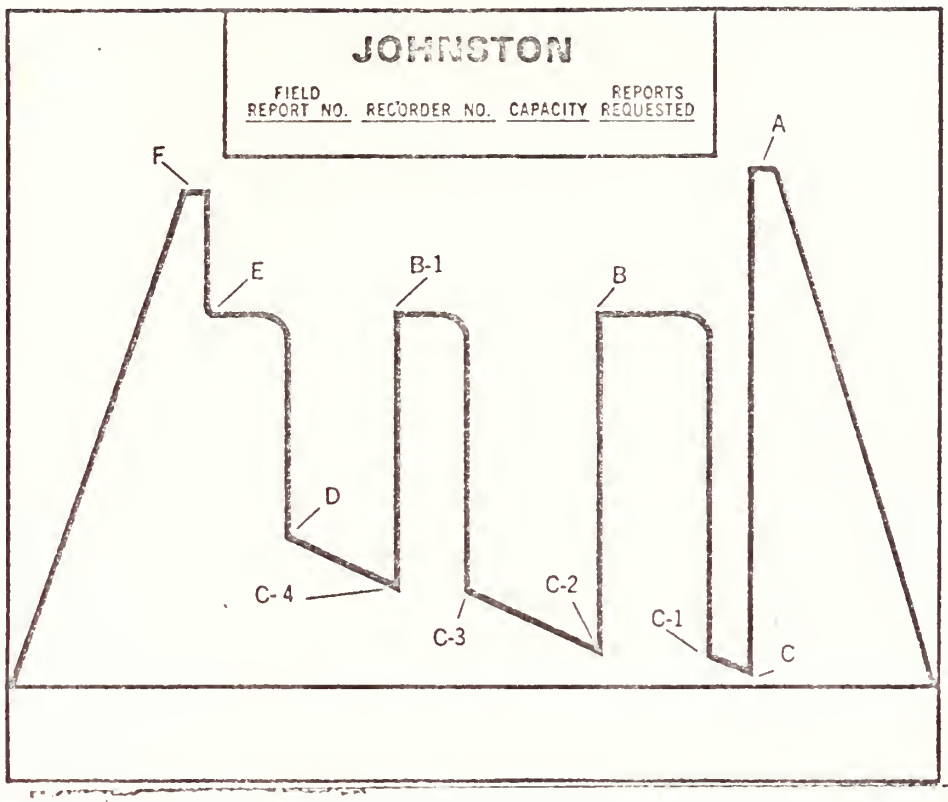
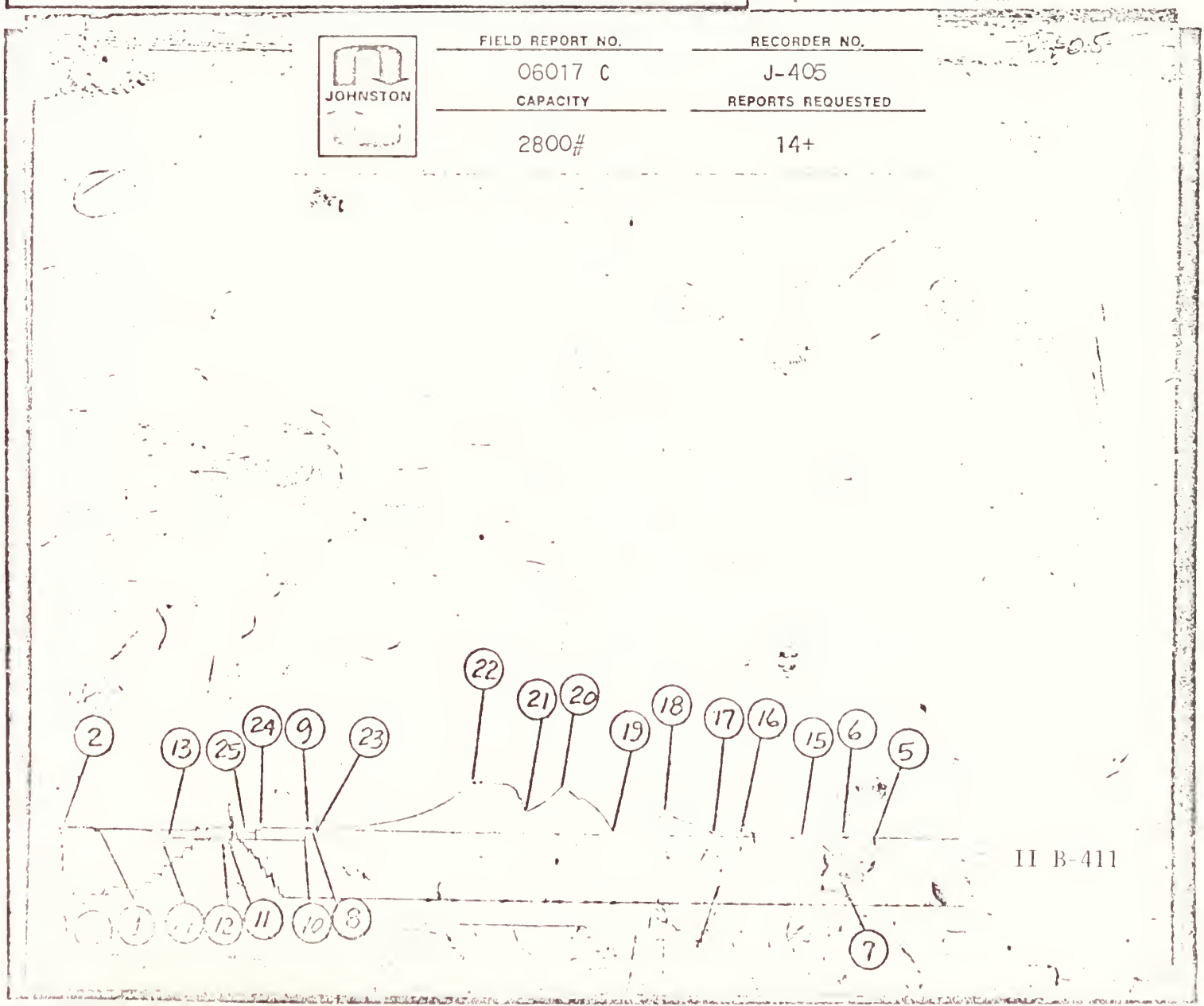
GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.



SPERRY-SUN

POST OFFICE BOX 36363 HOUSTON, TEXAS 77036 (713) 494-3021

J. A. Fouché
President

November 21, 1974

Mr. F. C. Witmer
Atlantic Richfield Company
1500 Security Life Building
Denver, Colorado 80202

Dear Sir:

Enclosed is the original of our Precision Pressure Gauge Drill Stem Test job SPG-11210-C performed on your Federal SG-17 Well, Tract C-b, Piceance Creek Basin, Sorghum Gulch, Rio Blanco County, Colorado on November 16, 1974. Test interval was 0-967 feet and 967 feet to 1,017 feet.

Also enclosed is the chart for gauge No. 196 and No. 204 with Field Data Sheet.

Distribution is also being made according to the attached mailing list.

Thank you for this opportunity to be of service.

Very truly yours,

SPERRY-SUN

Carl Kisinger, Jr.

Carl Kisinger, Jr.
Manager Pressure Services

CK:jg
Enclosure

0-967

967-1017

II B-412

JOB NUMBER
SPG-11210-C

DATE OF JOB
11-16-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

PREPARED FOR

ATLANTIC RICHFIELD COMPANY

WELL NUMBER	SG-17
FIELD/LEASE	TRACT C-B SORGHUM GULCH
COUNTY/PARISH	RIO BLANCO
STATE	COLORADO
TYPE OF TEST	DRILL STEM
REFERENCE ELEV	GROUND LEVEL

ADDITIONAL INFORMATION

USED GAUGE NO. 196 WITH 1000 LB. ELEMENT

GAUGE TEST DEPTH IS 1006.98 FEET

GROUND LEVEL REFERENCE IS 7036 FEET

INITIAL HYDROSTATIC IS 243.12

FINAL GYDROSTATIC IS 244.38

TEST INTERVAL 967 TO 1017 FEET

235 POINTS REPORTED THIS JOB

JOB NUMBER
8PG-11210-C

DATE OF JOB
11-16-7

GAUGE/RUN NUMBER
196 RUN NO. 3 DST NO. 6

DATE OF RUN
11-21-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
0.000	84.493	13	17	NOV 16,1974	SHUT-IN
.017	193.517	13	18	NOV 16,1974	
.033	194.513	13	19	NOV 16,1974	
.050	197.264	13	20	NOV 16,1974	
.067	198.117	13	21	NOV 16,1974	
.083	198.544	13	22	NOV 16,1974	
.100	198.734	13	23	NOV 16,1974	
.117	198.829	13	24	NOV 16,1974	
.133	198.876	13	25	NOV 16,1974	
.167	198.971	13	27	NOV 16,1974	
.233	198.995	13	31	NOV 16,1974	
.367	199.066	13	39	NOV 16,1974	
.500	199.090	13	47	NOV 16,1974	
.600	199.184	13	53	NOV 16,1974	END

14 POINTS REPORTED THIS RUN

JOB NUMBER
SPG-11210-C

DATE OF JO
11-16-7

GAUGE/RUN NUMBER
196 RUN NO. 3 DST NO. 6

DATE OF RU
11-21-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
0.000	130.730	14 03	NOV 16,1974	FLOW
.017	157.950	14 04	NOV 16,1974	
.033	193.992	14 05	NOV 16,1974	
.050	208.645	14 06	NOV 16,1974	
.067	219.837	14 07	NOV 16,1974	
.083	228.634	14 08	NOV 16,1974	
.100	235.392	14 09	NOV 16,1974	
.117	241.035	14 10	NOV 16,1974	
.133	244.876	14 11	NOV 16,1974	
.150	247.816	14 12	NOV 16,1974	
.167	249.903	14 13	NOV 16,1974	
.183	251.160	14 14	NOV 16,1974	
.200	252.013	14 15	NOV 16,1974	
.217	252.606	14 16	NOV 16,1974	
.233	252.985	14 17	NOV 16,1974	
.250	253.223	14 18	NOV 16,1974	
.267	253.412	14 19	NOV 16,1974	
.283	253.555	14 20	NOV 16,1974	
.317	253.721	14 22	NOV 16,1974	
.383	253.839	14 26	NOV 16,1974	
.517	254.029	14 34	NOV 16,1974	
.783	254.242	14 50	NOV 16,1974	
1.050	254.384	15 06	NOV 16,1974	
1.317	254.527	15 22	NOV 16,1974	
1.583	254.598	15 38	NOV 16,1974	
1.783	254.669	15 50	NOV 16,1974	
1.817	254.740	15 52	NOV 16,1974	
1.850	254.930	15 54	NOV 16,1974	
1.983	254.906	16 02	NOV 16,1974	
2.267	254.882	16 19	NOV 16,1974	
2.533	254.788	16 35	NOV 16,1974	START AIR
2.550	262.304	16 36	NOV 16,1974	
2.567	236.008	16 37	NOV 16,1974	
2.583	215.806	16 38	NOV 16,1974	
2.600	218.557	16 39	NOV 16,1974	
2.617	219.861	16 40	NOV 16,1974	
2.650	219.410	16 42	NOV 16,1974	
2.717	218.983	16 46	NOV 16,1974	
2.833	218.082	16 53	NOV 16,1974	
2.900	218.130	16 57	NOV 16,1974	

JOB NUMBER
SPG-11210-C

DATE OF JOB
11-16-74

GAUGE/RUN NUMBER
196 RUN NO. 3 DST NO. 6

DATE OF RUN
11-21-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
2.950	218.367	17	00	NOV 16,1974	
2.967	212.012	17	01	NOV 16,1974	
2.983	220.311	17	02	NOV 16,1974	
3.000	219.979	17	03	NOV 16,1974	
3.017	218.462	17	04	NOV 16,1974	
3.067	217.727	17	07	NOV 16,1974	
3.233	217.845	17	17	NOV 16,1974	
3.250	201.081	17	18	NOV 16,1974	
3.267	204.638	17	19	NOV 16,1974	
3.283	219.244	17	20	NOV 16,1974	
3.300	233.495	17	21	NOV 16,1974	
3.317	238.545	17	22	NOV 16,1974	
3.333	242.387	17	23	NOV 16,1974	
3.350	245.445	17	24	NOV 16,1974	
3.367	248.030	17	25	NOV 16,1974	
3.383	249.453	17	26	NOV 16,1974	
3.400	250.614	17	27	NOV 16,1974	
3.417	251.326	17	28	NOV 16,1974	
3.433	251.776	17	29	NOV 16,1974	
3.450	252.132	17	30	NOV 16,1974	
3.467	251.753	17	31	NOV 16,1974	
3.483	252.274	17	32	NOV 16,1974	
3.500	251.942	17	33	NOV 16,1974	
3.517	252.345	17	34	NOV 16,1974	
3.533	252.084	17	35	NOV 16,1974	
3.550	252.488	17	36	NOV 16,1974	
3.567	252.132	17	37	NOV 16,1974	
3.583	252.464	17	38	NOV 16,1974	
3.600	252.440	17	39	NOV 16,1974	
3.617	252.322	17	40	NOV 16,1974	
3.633	252.630	17	41	NOV 16,1974	
3.650	252.511	17	42	NOV 16,1974	
3.667	252.772	17	43	NOV 16,1974	
3.683	252.677	17	44	NOV 16,1974	
3.700	252.796	17	45	NOV 16,1974	
3.717	252.820	17	46	NOV 16,1974	
3.733	252.701	17	47	NOV 16,1974	
3.750	252.985	17	48	NOV 16,1974	
3.767	252.938	17	49	NOV 16,1974	
3.783	253.057	17	50	NOV 16,1974	

JOB NUMBER
SPG-11210-C

DATE OF JO
11-16-7

GAUGE/RUN NUMBER
196 RUN NO. 3 DST NO. 6

DATE OF RU
11-21-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
3.817	253.246	17	52	NOV 16,1974	
3.883	253.460	17	56	NOV 16,1974	
4.017	253.721	18	04	NOV 16,1974	
4.283	254.053	18	20	NOV 16,1974	
4.550	254.171	18	36	NOV 16,1974	
4.700	254.313	18	45	NOV 16,1974	START 5 GAL.
4.717	256.684	18	46	NOV 16,1974	MIN. INJECTION
4.733	259.340	18	47	NOV 16,1974	
4.750	261.166	18	48	NOV 16,1974	
4.767	262.257	18	49	NOV 16,1974	
4.783	263.087	18	50	NOV 16,1974	
4.800	263.822	18	51	NOV 16,1974	
4.817	264.272	18	52	NOV 16,1974	
4.833	264.675	18	53	NOV 16,1974	
4.850	264.960	18	54	NOV 16,1974	
4.867	265.149	18	55	NOV 16,1974	
4.883	265.410	18	56	NOV 16,1974	
4.900	265.553	18	57	NOV 16,1974	
4.917	265.718	18	58	NOV 16,1974	
4.933	265.861	18	59	NOV 16,1974	
4.950	265.837	19	00	NOV 16,1974	END 5 GAL. PER
4.967	264.225	19	01	NOV 16,1974	MIN. INJECTION
4.983	261.403	19	02	NOV 16,1974	
5.000	259.506	19	03	NOV 16,1974	
5.017	258.202	19	04	NOV 16,1974	
5.033	257.254	19	05	NOV 16,1974	
5.050	256.542	19	06	NOV 16,1974	
5.067	256.187	19	07	NOV 16,1974	
5.083	255.902	19	08	NOV 16,1974	
5.100	255.736	19	09	NOV 16,1974	START 10 GAL.
5.117	256.021	19	10	NOV 16,1974	MIN. INJECTION
5.133	264.936	19	11	NOV 16,1974	
5.150	274.017	19	12	NOV 16,1974	
5.167	280.633	19	13	NOV 16,1974	
5.183	285.707	19	14	NOV 16,1974	
5.200	290.141	19	15	NOV 16,1974	
5.217	294.054	19	16	NOV 16,1974	
5.233	298.345	19	17	NOV 16,1974	
5.250	302.021	19	18	NOV 16,1974	
5.267	305.933	19	19	NOV 16,1974	

JOB NUMBER
SPG-11210-C

DATE OF JO
11-16-7

GAUGE/RUN NUMBER
196 RUN NO. 3 DST NO. 6

DATE OF RU
11-21-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
5.283	310.106	19	20	NOV 16,1974	
5.300	315.157	19	21	NOV 16,1974	
5.317	320.895	19	22	NOV 16,1974	
5.333	326.562	19	23	NOV 16,1974	
5.350	328.269	19	24	NOV 16,1974	END 10 GAL.
5.367	318.476	19	25	NOV 16,1974	MIN. INJECTION
5.383	309.845	19	26	NOV 16,1974	
5.400	302.400	19	27	NOV 16,1974	
5.417	295.879	19	28	NOV 16,1974	
5.433	290.402	19	29	NOV 16,1974	
5.450	285.636	19	30	NOV 16,1974	
5.467	281.558	19	31	NOV 16,1974	
5.483	277.954	19	32	NOV 16,1974	
5.500	274.729	19	33	NOV 16,1974	
5.517	272.073	19	34	NOV 16,1974	
5.533	269.726	19	35	NOV 16,1974	
5.550	267.734	19	36	NOV 16,1974	
5.567	265.956	19	37	NOV 16,1974	
5.583	264.414	19	38	NOV 16,1974	START 20 GAL.
5.600	302.637	19	39	NOV 16,1974	MIN. INJECTION
5.617	320.847	19	40	NOV 16,1974	
5.633	336.070	19	41	NOV 16,1974	
5.650	348.258	19	42	NOV 16,1974	
5.667	359.355	19	43	NOV 16,1974	
5.683	368.626	19	44	NOV 16,1974	
5.700	377.921	19	45	NOV 16,1974	
5.717	382.687	19	46	NOV 16,1974	
5.733	336.165	19	47	NOV 16,1974	
5.750	346.218	19	48	NOV 16,1974	
5.767	410.358	19	49	NOV 16,1974	
5.783	418.420	19	50	NOV 16,1974	END 20 GAL.
5.800	407.939	19	51	NOV 16,1974	MIN. INJECTION
5.817	394.874	19	52	NOV 16,1974	
5.833	382.900	19	53	NOV 16,1974	
5.850	372.538	19	54	NOV 16,1974	
5.867	363.314	19	55	NOV 16,1974	
5.883	355.039	19	56	NOV 16,1974	
5.900	347.404	19	57	NOV 16,1974	
5.917	340.480	19	58	NOV 16,1974	
5.933	334.126	19	59	NOV 16,1974	

JOB NUMBER
SPG-11210-C

DATE OF JOB
11-16-7

GAUGE/RUN NUMBER
196 RUN NO. 3 DST NO. 6

DATE OF RUN
11-21-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
5.950	328.103	20 00	NOV 16,1974	FILL PIPE 20
5.967	346.503	20 01	NOV 16,1974	GAL. PER MIN.
5.983	363.883	20 02	NOV 16,1974	
6.000	402.225	20 03	NOV 16,1974	
6.017	416.262	20 04	NOV 16,1974	
6.033	424.276	20 05	NOV 16,1974	
6.050	425.889	20 06	NOV 16,1974	
6.067	426.932	20 07	NOV 16,1974	
6.083	427.620	20 08	NOV 16,1974	
6.100	427.714	20 09	NOV 16,1974	
6.117	431.840	20 10	NOV 16,1974	
6.133	432.599	20 11	NOV 16,1974	
6.150	432.338	20 12	NOV 16,1974	
6.167	433.524	20 13	NOV 16,1974	
6.183	434.045	20 14	NOV 16,1974	START DECLINE
6.200	424.750	20 15	NOV 16,1974	
6.217	414.057	20 16	NOV 16,1974	
6.233	403.647	20 17	NOV 16,1974	
6.250	394.021	20 18	NOV 16,1974	
6.267	384.821	20 19	NOV 16,1974	
6.283	376.000	20 20	NOV 16,1974	
6.300	368.057	20 21	NOV 16,1974	
6.317	360.374	20 22	NOV 16,1974	
6.333	353.047	20 23	NOV 16,1974	
6.350	346.645	20 24	NOV 16,1974	
6.367	340.409	20 25	NOV 16,1974	
6.383	334.481	20 26	NOV 16,1974	
6.400	328.791	20 27	NOV 16,1974	
6.417	323.432	20 28	NOV 16,1974	
6.433	318.453	20 29	NOV 16,1974	
6.450	313.781	20 30	NOV 16,1974	
6.467	309.608	20 31	NOV 16,1974	
6.483	305.482	20 32	NOV 16,1974	
6.500	301.783	20 33	NOV 16,1974	
6.517	298.274	20 34	NOV 16,1974	
6.533	294.955	20 35	NOV 16,1974	
6.550	291.872	20 36	NOV 16,1974	
6.567	289.003	20 37	NOV 16,1974	
6.583	286.466	20 38	NOV 16,1974	
6.600	284.071	20 39	NOV 16,1974	

JOB NUMBER
SPG-11210-C

DATE OF JOB
11-16-74

GAUGE/RUN NUMBER
196 RUN NO. 3 DST NO. 6

DATE OF RUN
11-21-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
6.617	281.818	20	40	NOV 16,1974	
6.633	279.613	20	41	NOV 16,1974	
6.650	277.716	20	42	NOV 16,1974	
6.667	275.820	20	43	NOV 16,1974	
6.683	276.436	20	44	NOV 16,1974	
6.700	272.476	20	45	NOV 16,1974	
6.717	271.006	20	46	NOV 16,1974	
6.733	269.655	20	47	NOV 16,1974	
6.750	268.398	20	48	NOV 16,1974	
6.767	267.212	20	49	NOV 16,1974	
6.783	266.193	20	50	NOV 16,1974	
6.800	265.149	20	51	NOV 16,1974	
6.817	264.272	20	52	NOV 16,1974	
6.833	263.490	20	53	NOV 16,1974	
6.850	262.707	20	54	NOV 16,1974	
6.867	261.996	20	55	NOV 16,1974	
6.883	261.450	20	56	NOV 16,1974	
6.900	260.929	20	57	NOV 16,1974	
6.917	260.502	20	58	NOV 16,1974	
6.933	260.099	20	59	NOV 16,1974	
6.950	259.672	21	00	NOV 16,1974	END OF TEST

221 POINTS REPORTED THIS RUN

JOB NUMBER
SPG-11210-C

DATE OF JOB
11-16-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

PREPARED FOR

ATLANTIC RICHFIELD COMPANY

WELL NUMBER	SG-17
FIELD/LEASE	TRACT C-B SORGHUM GULCH
COUNTY/PARISH	RIO BLANCO
STATE	COLORADO
TYPE OF TEST	DRILL STEM
REFERENCE ELEV	GROUND LEVEL

ADDITIONAL INFORMATION

USED GAUGE NO. 204 WITH 1000 LB. ELEMENT

GAUGE TEST DEPTH IS 914.24 FEET

TEST INTERVAL IS 0 TO 967 ANNULUS

INITIAL HYDROSTATIC IS 205.91

FINAL HYDROSTATIC IS 207.26

GROUND LEVEL REFERENCE IS 7036 FEET

77 POINTS REPORTED THIS JOB

JOB NUMBER
8PG-11210-C

DATE OF JOB
11-16-74

GAUGE/RUN NUMBER
204 RUN NO. 3 DST NO. 6

DATE OF RUN
11-21-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
0.000	212.660	13 17	NOV 16,1974	
.067	212.294	13 21	NOV 16,1974	
.201	211.746	13 29	NOV 16,1974	
.469	211.311	13 45	NOV 16,1974	
1.473	211.380	14 45	NOV 16,1974	
2.477	211.814	15 46	NOV 16,1974	
3.364	212.226	16 39	NOV 16,1974	
3.381	212.409	16 40	NOV 16,1974	
3.414	212.706	16 42	NOV 16,1974	
3.481	213.209	16 46	NOV 16,1974	
3.548	213.506	16 50	NOV 16,1974	
3.615	213.757	16 54	NOV 16,1974	
3.682	214.009	16 58	NOV 16,1974	
3.816	214.237	17 06	NOV 16,1974	
3.950	214.329	17 14	NOV 16,1974	
4.033	214.443	17 19	NOV 16,1974	
4.050	214.420	17 20	NOV 16,1974	
4.084	214.352	17 22	NOV 16,1974	
4.150	214.032	17 26	NOV 16,1974	
4.217	213.689	17 30	NOV 16,1974	
4.284	213.460	17 34	NOV 16,1974	
4.418	213.186	17 42	NOV 16,1974	
5.422	213.094	18 42	NOV 16,1974	
6.427	213.392	19 43	NOV 16,1974	
6.560	213.460	19 51	NOV 16,1974	
6.577	213.506	19 52	NOV 16,1974	
6.594	213.620	19 53	NOV 16,1974	
6.627	213.689	19 55	NOV 16,1974	
6.878	213.780	20 10	NOV 16,1974	
6.895	214.123	20 11	NOV 16,1974	
6.929	215.609	20 13	NOV 16,1974	
6.996	216.775	20 17	NOV 16,1974	
7.029	217.301	20 19	NOV 16,1974	
7.046	217.301	20 20	NOV 16,1974	
7.063	217.163	20 21	NOV 16,1974	
7.129	216.340	20 25	NOV 16,1974	
7.196	215.792	20 29	NOV 16,1974	START 20 GAL.
7.213	218.466	20 30	NOV 16,1974	MIN. INJECTION
7.230	220.707	20 31	NOV 16,1974	
7.247	222.924	20 32	NOV 16,1974	

JOB NUMBER
SPG-11210-C

DATE OF JOB
11-16-74

GAUGE/RUN NUMBER
204 RUN NO. 3 DST NO. 6

DATE OF RUN
11-21-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
7.263	224.867	20	33	NOV 16,1974	
7.280	226.719	20	34	NOV 16,1974	
7.297	228.410	20	35	NOV 16,1974	
7.314	230.239	20	36	NOV 16,1974	
7.330	232.022	20	37	NOV 16,1974	
7.347	233.874	20	38	NOV 16,1974	
7.364	235.520	20	39	NOV 16,1974	
7.380	237.051	20	40	NOV 16,1974	
7.397	238.377	20	41	NOV 16,1974	
7.414	239.589	20	42	NOV 16,1974	
7.431	240.777	20	43	NOV 16,1974	
7.447	240.777	20	44	NOV 16,1974	END 20 GAL.
7.464	239.749	20	45	NOV 16,1974	MIN. INJECTION
7.481	238.583	20	46	NOV 16,1974	
7.498	237.760	20	47	NOV 16,1974	
7.514	236.617	20	48	NOV 16,1974	
7.531	235.360	20	49	NOV 16,1974	
7.548	234.011	20	50	NOV 16,1974	
7.565	232.845	20	51	NOV 16,1974	
7.581	231.794	20	52	NOV 16,1974	
7.598	230.833	20	53	NOV 16,1974	
7.615	229.873	20	54	NOV 16,1974	
7.632	229.028	20	55	NOV 16,1974	
7.648	228.273	20	56	NOV 16,1974	
7.665	227.610	20	57	NOV 16,1974	
7.682	226.902	20	58	NOV 16,1974	
7.698	226.216	20	59	NOV 16,1974	
7.715	225.644	21	00	NOV 16,1974	
7.732	225.164	21	01	NOV 16,1974	
7.749	224.570	21	02	NOV 16,1974	
7.765	223.930	21	03	NOV 16,1974	
7.782	223.198	21	04	NOV 16,1974	
7.799	222.581	21	05	NOV 16,1974	
7.816	222.147	21	06	NOV 16,1974	
7.883	220.569	21	10	NOV 16,1974	
7.950	219.335	21	14	NOV 16,1974	
8.067	217.712	21	21	NOV 16,1974	END OF TEST

77 POINTS REPORTED THIS RUN

PRESSURE GAUGE DRILL STEM TEST SHEET

Job No. SPG-11210-C Date 11-16-74 Run DST #6 Office CASPER

Customer ARCO-ET AL Location SORGHUM GULCH

State COLORADO County/~~Parish~~ RIO BLANCO

Well SG No. 17 Field TRACT C-b

USE MILITARY TIME FOR ALL TIMES

	Time	Date	Time	Date	Time Charged
Arrive: Well/~~Dock~~	1. .0130	11-16-74 2.			
Depart: Well/~~Dock~~	1. .0100	11-17-74.			23 1/2 Hrs.
Gauge Start in Hole	1. .1020	11-16-74 2.			
Gauge Out of Hole	1. .0024	11-17-74 2.			14 Hrs.

No. Trips 1 Miles 45 Total Mileage 90

Top Gauge # 204 Element # 32761 Range 1000# Time Mode 1 min.

Btm. Gauge # 196 Element # 30951 Range 1000# Time Mode 1 min.

Type Tool JOHNSTON HYD. Test Depth 967'-1017' Zero Point GROUND LEVEL

Packer Depth 967' Tail Pipe Depth 1017' Top Gauge Depth 914.24 (911.28)

Bottom Hole Temp. 87° Atmos. Temp. 52° Bottom Gauge Depth 1006.24 (1003.15)

TIME INFORMATION	Time	Date	PRESSURE INFORMATION	
On Bottom TAGGED	.1237	11-16-74	Initial Hydrostatic Mud	243.12 (.1206)
Packer Set	.1307-.1316	11-16-74	Initial Draw Down	
Initial Open	.1316-.1317	11-16-74	Initial Build-Up	201.52 (.1353)
Initial Shut-In	.1324-.1353	11-16-74	Final Flow	365.04 (.1505)
Start Flow	.1403	11-16-74	Final Build-Up	
Final Shut-In			Final Hydrostatic Mud	
Packer Unseated	.2104-.2114	11-16-74	Mud Weight	

TIME OF SURFACE NULLS

	START	END		START	END
PERSONAL TIME Top Gauge #204	.1105:35	.2333	Bottom Gauge #196	.1010	.0024

Remarks ROTARY TABLE 9' ABOVE GL.; TIMES FROM STAR RECORDER. DST #6

SP-423 II B-424

BILL FOSTER
Operator

COMPANY ATLANTIC-RICHFIELD COMPANY WELL FEDERAL S-G #17 TEST NO. 1 COUNTY RIO BLANCO STATE COLORADO

JOHNSTON

Schlumberger

technical report

II B-425

F.R. #06018 C

JOHNSTON

PRESSURE LOG*

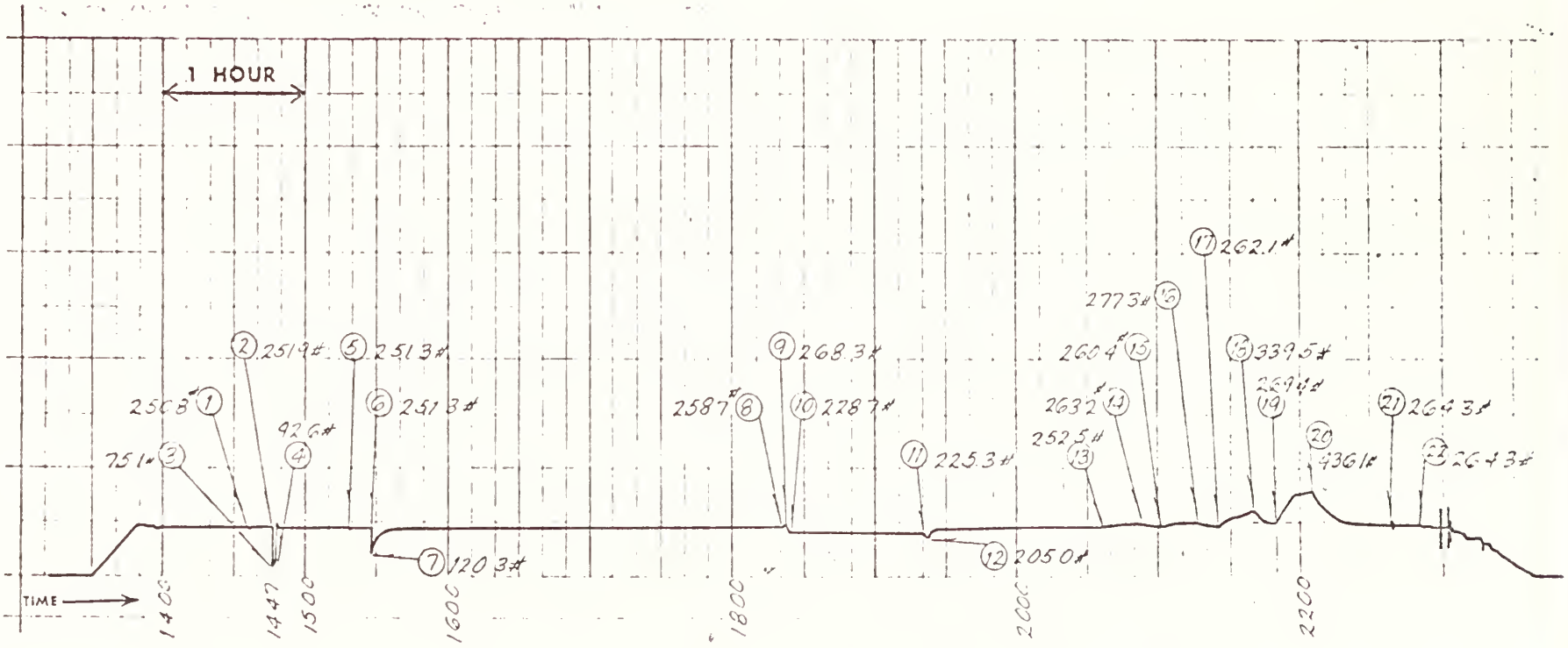
Field Report No. 06018C

Instrument: Number J-405

Capacity 2500 p.s.i.

Depth 1028 ft.

*a continuous tracing of the original chart



JOHNSTON
...found a better way

SURFACE INFORMATION

Description (Rate of Flow)	Time	Pressure (P.S.I.G.)	Surface Choke
Opened Tool	1447	-	-
CLOSED FOR INITIAL SHUT-IN	1448	-	-
FINISHED SHUT-IN	1518	-	-
RE-OPENED TOOL	1528	-	-
STARTED JETTING AIR	1822	-	-
STOPPED JETTING AIR	1922	-	-
STARTED INJECTING WATER			
5 GAL/MIN	2037	-	-
STOPPED INJECTING WATER	2051	-	-
STARTED INJECTING WATER			
10 GAL/MIN	2100	-	-
STOPPED INJECTING WATER	2115	-	-
STARTED INJECTING WATER			
20 GAL/MIN	2125	-	-
STOPPED INJECTING WATER	2140	-	-
STARTED PIPE FILL-UP	2150	-	-
STOPPED PIPE FILL-UP	2205	-	-
STARTED FILLING ANNULUS			
20 GAL/MIN	2215	-	-
STOPPED FILLING ANNULUS	2230	-	-
CLOSED FOR FINAL SHUT-IN	2241	-	-
FINISHED SHUT-IN	2251	-	-
PULLED PACKER LOOSE	2252	-	-

Cushion Type	Amount	Pressure	Bottom Choke
	-		Size 3/4"

MUD DATA

Mud Type WATER FOAM Wt. -
Viscosity - Water Loss - C.C.
Resist: of Mud - @ - °F; of Filtrate - @ - °F
Chloride Content - PPM

EQUIPMENT & HOLE DATA

Type Test M.F.E. OPEN HOLE
Formation Tested PARACHUTE MEMBER GREEN
Elevation 7036 Ft.
Net Productive Interval 50 Ft.
Estimated Porosity POOR %
All Depths Measured From GROUND LEVEL
Total Depth 1067 Ft.
Main Hole/Casing Size 6 3/4"
Rat Hole/Liner Size -
Drill Collar Length 326' I.D. -
Drill Pipe Length 638' I.D. -
Packer Depth(s) 1012 & 1017 Ft.

MULTI-FLOW EVALUATOR FLUID SAMPLE DATA

Sampler Pressure _____ P.S.I.G. at Surface
Recovery: Cu. Ft. Gas _____
cc. Oil _____
cc. Water _____
cc. Mud _____
Tot. Liquid cc. _____
Gravity _____ °API @ _____ °F.
Gas/Oil Ratio _____ cu. ft./bbl.

		RESISTIVITY	CHLORIDE CONTENT
Recovery Water	@ °F.		ppm
Recovery Mud	@ °F.		
Recovery Mud Filtrate	@ °F.		ppm
Mud Pit Sample	@ °F.		
Mud Pit Sample Filtrate	@ °F.		ppm

RECOVERY DESCRIPTION	FEET	BARRELS	% OIL	% WATER	% OTHERS	API GRAVITY	RESISTIVITY	CHL. PPM
-						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	
						@ °F.	@ °F.	

Remarks: _____

Address 1500 SECURITY LIFE BUILDING, 1600 GLENARM; DENVER, COLORADO 80202

Company ATLANTIC-RICHFIELD COMPANY Field SORGHUM GULCH
Well FEDERAL S-G #17 Location 436' FWL-181'FSL-SEC. 16-3S-96W
Test Interval 1017' TO 1067' Test # 7 Date 11-18-74

II B-427

County RIO BLANCO State COLORADO
Technician TAYLOR(VERNAL) Test Approved By MR. L. M. POWERS

Field Report No. 06018 C
No. Reports Requested 14(13x)

JOHNSTON
...found a better way

PRESSURE DATA

Instrument No.	J-029			
Capacity (P.S.I.G.)	2800			
Instrument Depth	1000'			
Instrument Opening	INSIDE			
Pressure Gradient P.S.I./Ft.				
Well Temperature °F.	90			
Initial Hydrostatic Mud A				
Initial Shut-in B				
Initial Flow C				
Final Flow D				
Final Shut-in E				
Final Hydrostatic Mud F				

Field Report No. 06018 C

TIME DATA

Time Given	Time Computed
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

POINTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
1	236.4		4 0	70.0		10	237.6	
2	239.3		1	235.9		11	238.1	
3	45.6		2	235.9		12	238.7	
4	70.0		3	235.9		13	239.3	
5	239.3		4	235.9		14	239.3	
6	241.5		5	236.4		15	239.3	
7	100.6		6	237.0		16	239.8	
8	243.2		7	237.6		17	239.8	
9	253.4		8	237.6		18	239.8	
10	210.4		9	238.1		19	239.8	
11	209.8		10	238.1		20	239.8	
12	188.9		11	238.1		30	240.4	
13	242.1		12	238.1		40	241.0	
14	251.7		13	238.1		50	241.0	
15	247.2		14	238.1		60	241.0	
16	265.9		15	238.1		70	241.0	
17	248.3		20	238.7		80	241.0	
18	327.0		25	238.7		90	241.0	
19	255.7		30	239.3		100	241.5	
20	424.4		5 31	239.3		110	242.1	
21	247.8					120	242.1	
22	247.8		7 0	100.6		130	242.1	
			1	152.1		140	242.1	
			2	175.9		150	243.2	
			3	193.4		160	243.2	
			4	207.0		170	243.2	
			5	217.2		8 173	243.2	
			6	225.1	II B-428	9 175	253.4	
			7	230.8		10 178	210.4	
			8	234.2		10	209.8	
			9	235.9		20	209.8	
			CONTINUED			CONTINUED		

JOHNSTON
...found a better way

PRESSURE DATA

Instrument No.	J-029			
Capacity (P.S.I.G.)				
Instrument Depth				
Instrument Opening				
Pressure Gradient P.S.I./Ft.				
Well Temperature °F.				
Initial Hydrostatic Mud A				
Initial Shut-in B				
Initial Flow C				
Final Flow D				
Final Shut-in E				
Final Hydrostatic Mud F				

Field Report No. 06018 C

TIME DATA

Time Given	Time Computed
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.
Mins.	Mins.

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
30	209.8		20	247.8		80	407.4	
40	209.8		22	247.2		82	416.5	
50	209.8		24	247.2		84	419.9	
11 58	209.8		15 25	247.2		86	422.7	
12 60	188.9		26	254.6		88	424.4	
1	212.1		28	259.1		20 89	424.4	
2	222.3		30	261.4		90	388.2	
3	228.5		32	262.5		92	353.1	
4	231.9		34	263.6		94	327.0	
5	234.2		36	264.8		96	303.8	
6	235.9		38	265.9		98	288.0	
7	235.9		16 40	265.9		100	273.8	
8	237.0		42	252.9		102	264.2	
9	237.6		44	250.0		104	257.4	
10	237.6		46	248.9		106	254.0	
20	240.4		48	248.3		108	251.2	
30	241.5		17 49	248.3		110	250.0	
40	241.5		50	266.5		112	249.5	
50	241.5		52	281.2		114	248.9	
60	242.1		54	291.4		116	248.3	
70	242.1		56	299.3		118	248.3	
13 73	242.1		58	306.1		120	248.3	
2	247.2		60	313.4		122	247.8	
4	250.0		62	324.8		21 123	247.8	
6	251.2		18 64	327.0		124	247.8	
8	251.7		66	292.5		126	247.8	
10	251.7		68	275.5	II B-429	128	247.8	
12	251.7		70	263.6		130	247.8	
14	251.7		72	256.8		132	247.8	
16	251.7		19 74	255.7		134	247.8	
14 17	251.7		76	329.9		22 135	247.8	
18	248.9		78	366.1				

JOHNSTON
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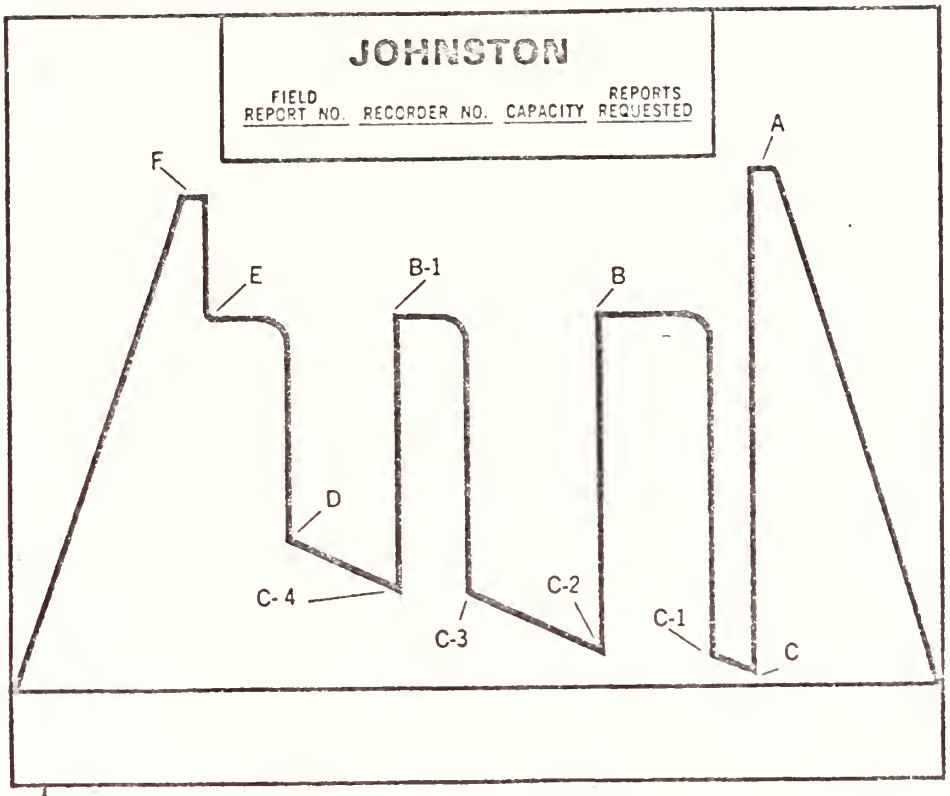
GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



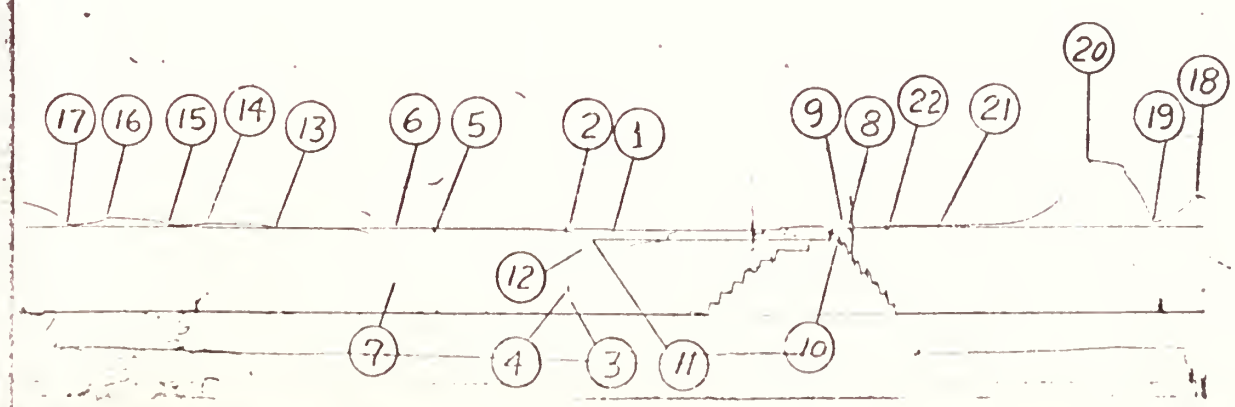
A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.

JOHNSTON

FIELD REPORT NO.	RECORDER NO.
06018 C	J-029
CAPACITY	REPORTS REQUESTED
2800#	14+



II B-430

JOHNSTON
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PRESSURE DATA

Instrument No.	J-405			
Capacity (P.S.I.G.)	2800			Field Report No. 06018 C
Instrument Depth	1028'			
Instrument Opening	OUTSIDE			
Pressure Gradient P.S.I./Ft.				
Well Temperature °F.	90			

TIME DATA

				Time Given	Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B			Mins.	Mins.
Initial Flow	C			Mins.	Mins.
				Mins.	Mins.
				Mins.	Mins.
Final Flow	D			Mins.	Mins.
Final Shut-in	E			Mins.	Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

PRESSURE INCREMENTS

POINTS

Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$	Point Minutes	Pressure	$\frac{T+\Delta t}{\Delta t}$
1	250.8		4 0	92.6		10	246.8	
2	251.9		1	251.3		11	247.4	
3	75.1		2	251.3		12	247.9	
4	92.6		3	251.3		13	248.5	
5	251.3		4	251.3		14	248.5	
6	251.3		5	251.3		15	248.5	
7	120.3		6	251.3		16	248.5	
8	258.7		7	251.3		17	248.5	
9	268.3		8	251.3		18	249.1	
10	228.7		9	251.3		19	249.1	
11	225.3		10	251.3		20	249.1	
12	205.0		11	251.3		30	250.2	
13	252.5		12	251.3		40	251.3	
14	263.2		13	251.3		50	251.9	
15	260.4		14	251.3		60	252.5	
16	277.3		15	251.3		70	253.0	
17	262.1		20	251.3		80	253.6	
18	339.5		25	251.3		90	254.2	
19	269.4		30	251.3		100	254.2	
20	436.1		5 31	251.3		110	254.2	
21	264.3					120	254.2	
22	264.3		7 0	120.3		130	254.7	
			1	162.1		140	255.3	
			2	186.4		150	256.4	
			3	203.3		160	258.1	
			4	216.3		170	258.7	
			5	227.0		8 173	258.7	
			6	234.4	II B-431	9 175	268.3	
			7	239.5		10 178	228.7	
			8	242.9		10	227.6	
			9	245.7		20	227.6	

CONTINUED CONTINUED

JOHNSTON
...found a better way

PRESSURE DATA

Instrument No.		J-405			Field Report No. 06018 C
Capacity (P.S.I.G.)					
Instrument Depth					
Instrument Opening					TIME DATA
Pressure Gradient P.S.I./Ft.					
Well Temperature °F.					Time Given / Time Computed
Initial Hydrostatic Mud	A				
Initial Shut-in	B				Mins. / Mins.
Initial Flow	C				Mins. / Mins.
					Mins. / Mins.
					Mins. / Mins.
Final Flow	D				Mins. / Mins.
Final Shut-in	E				Mins. / Mins.
Final Hydrostatic Mud	F				

Remarks:

*Shut in pressure did not reach static reservoir pressure.

Clock Travel _____ inches per min.

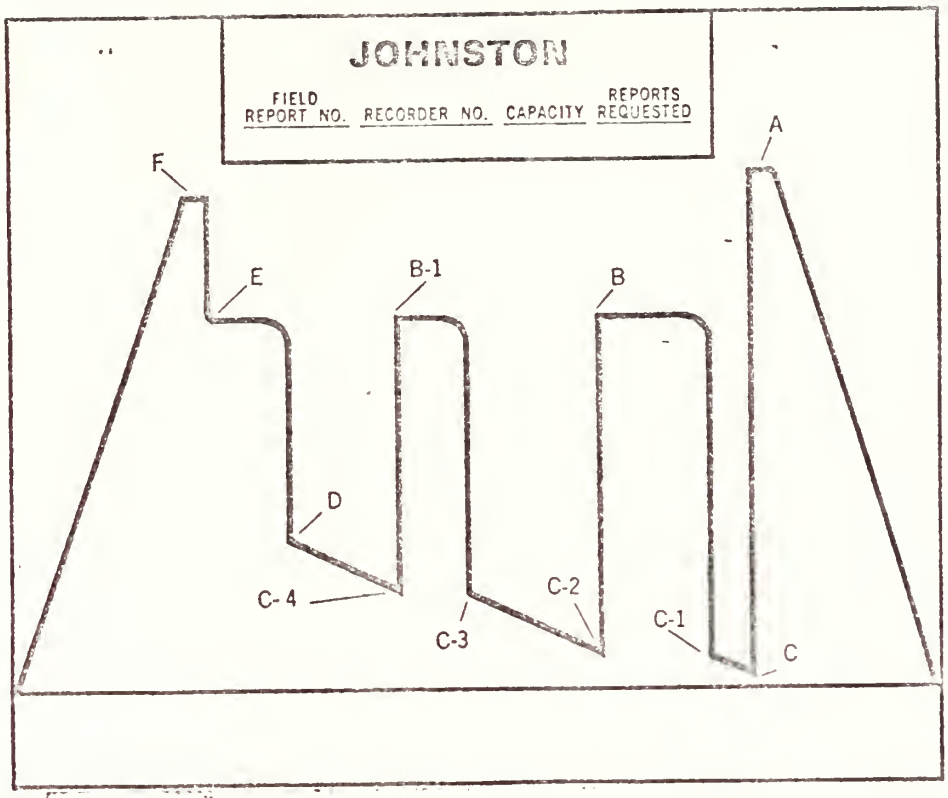
PRESSURE INCREMENTS

POINTS

Point Minutes	Pressure	T + Δt / Δt	Point Minutes	Pressure	T + Δt / Δt	Point Minutes	Pressure	T + Δt / Δt
30	227.0		20	260.9		80	401.6	
40	225.9		22	260.4		82	424.2	
50	225.3		24	260.4		84	429.3	
11 58	225.3		15 25	260.4		86	433.8	
12 60	205.0		26	263.8		88	436.1	
1	227.0		28	268.8		20 89	436.1	
2	236.1		30	271.7		90	414.6	
3	241.7		32	273.4		92	378.4	
4	245.1		34	274.5		94	348.5	
5	247.4		36	275.6		96	324.2	
6	248.5		38	276.8		98	305.6	
7	248.5		16 40	277.3		100	292.6	
8	248.5		42	267.7		102	281.3	
9	248.5		44	263.8		104	274.5	
10	249.1		46	262.6		106	270.0	
20	249.6		48	262.1		108	267.1	
30	250.2		17 49	262.1		110	266.6	
40	250.8		50	271.7		112	265.5	
50	250.8		52	288.6		114	265.5	
60	251.3		54	300.5		116	265.5	
70	252.5		56	308.4		118	264.3	
13 73	252.5		58	315.2		120	264.3	
2	258.1		60	322.5		122	264.3	
4	260.4		62	332.1		21 123	264.3	
6	261.5		18 64	339.5		124	264.3	
8	262.1		66	314.0		126	264.3	
10	262.6		68	294.3		128	264.3	
12	262.6		70	281.3	II B-432	130	264.3	
14	263.2		72	272.2		132	264.3	
16	263.2		19 74	269.4		134	264.3	
14 17	263.2		76	331.0		22 135	264.3	
18	261.5		78	366.6				

JOHNSTON
...found a better way

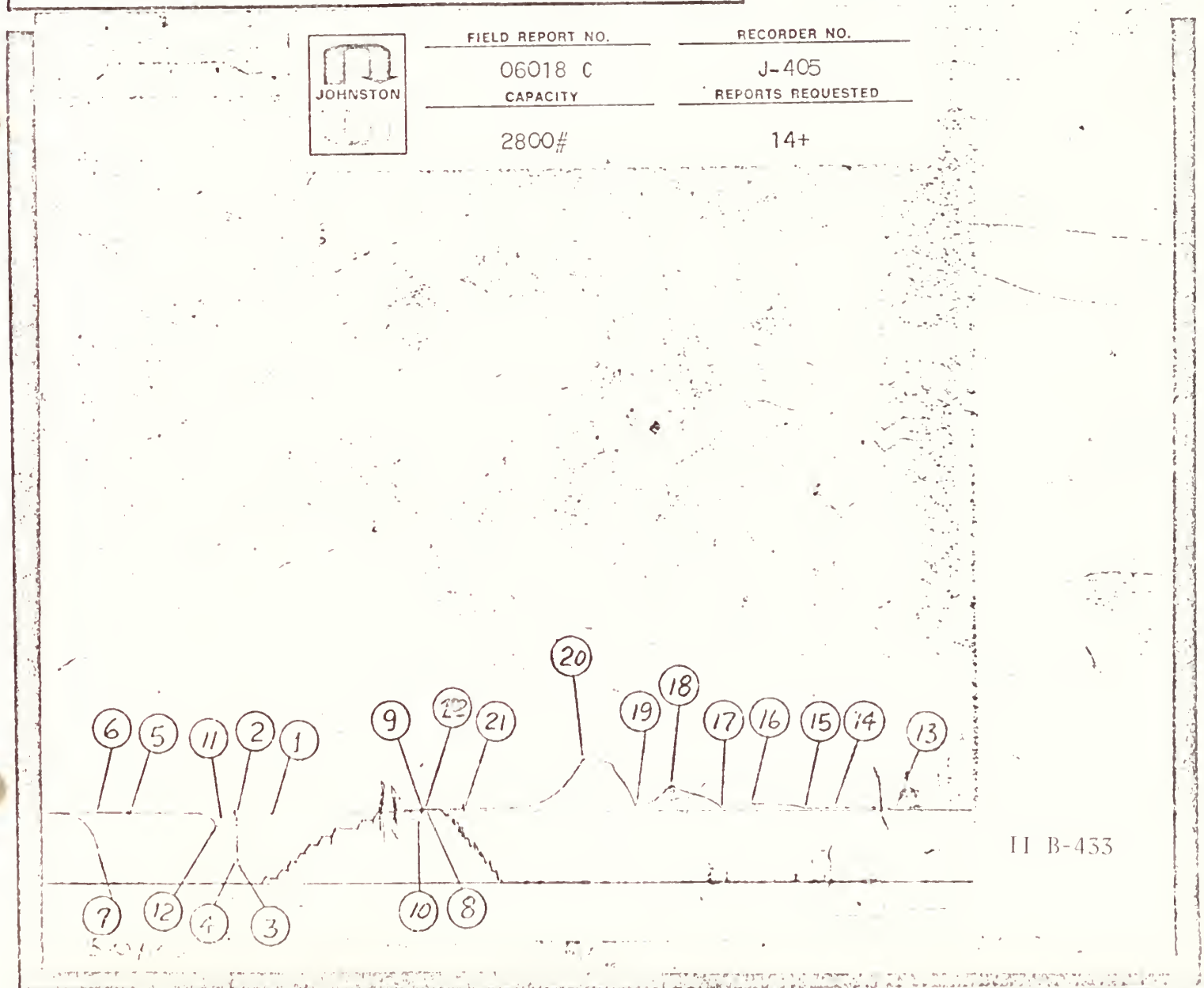
GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



A. Initial Hyd. Mud
B. Initial Shut-in
C. Initial Flow
D. Final Flow
E. Final Shut-in
F. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings, (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
B-1, B-2, B-3, etc. Subsequent Shut-in Pressures
C-1, C-2, C-3, etc. Flowing Pressures
D-1, D-2, D-3, etc. Subsequent Final Flow Pressures
E-1, E-2, E-3, etc. Subsequent Final Shut-in Pressures
F-1, F-2, F-3, etc. Final Hyd. Mud Pressures
Z — Special pressure points such as pumping pressure recorded for formation breakdown.



SPERRY-SUN

POST OFFICE BOX 36363 HOUSTON, TEXAS 77036 (713) 494-3021

J. A. Fouché
President

December 2, 1974

Mr. F. C. Witmer
Atlantic Richfield Company
1500 Security Life Building
Denver, Colorado 80202

Dear Sir:

Enclosed is the original of our Precision Pressure Gauge Drill Stem Test Job SPG-11210-D performed on your Federal SG-17 Well, Tract C-b, Piceane Creek Basin, Sorghum Gulch, Rio Blanco County, Colorado on November 19, 1974. Test interval was 1,017 feet (Packer Set) to 1,067 (T.D.) with one gauge inside the annulus above the packer and one gauge inside the drill pipe below the packer.

Also enclosed is the chart for gauge number 196 and 204 with Field Data Sheet.

Distribution is being made according to the attached mailing list.

Thank you for this opportunity to be of service.

Very truly yours,

SPERRY-SUN

Carl Kisinger, Jr.

Carl Kisinger, Jr.
Manager, Pressure Services

1017-1067

RECEIVED
DEC 05 1974
A. J. ROGERS

JOB NUMBER
SPG-11210-D

DATE OF JO
11-19-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

PREPARED FOR

ATLANTIC RICHFIELD COMPANY

WELL NUMBER	FEDERAL SG-17
FIELD/LEASE	TRACT C-B SORGHUM GULCH
COUNTY/PARISH	RIO BLANCO
STATE	COLORADO
TYPE OF TEST	DRILL STEM
REFERENCE ELEV	GROUND LEVEL

ADDITIONAL INFORMATION

USED GAUGE NO. 196 WITH 1000 LB. ELEMENT

GAUGE DEPTH IS 1043.05 FEET INSIDE DP

GROUND LEVEL REFERENCE IS 7036 FEET

INITIAL HYDROSTATIC IS 265.783

FINAL HYDROSTATIC IS 270.263

TEST INTERVAL IS FROM 1017 FEET

(PACKER SET) TO 1067 FEET (TD)

INSIDE DP

II B-435

391 POINTS REPORTED THIS JOB

SPERRY-SUN

PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
0.000	84.493	14	46	NOV 19,1974	CLOSE TOOL
.017	267.378	14	47	NOV 19,1974	START INITIAL
.033	265.647	14	48	NOV 19,1974	SHUT IN
.050	268.327	14	49	NOV 19,1974	
.067	269.512	14	50	NOV 19,1974	
.083	269.868	14	51	NOV 19,1974	
.100	270.058	14	52	NOV 19,1974	
.117	270.081	14	53	NOV 19,1974	
.133	270.176	14	54	NOV 19,1974	
.150	270.176	14	55	NOV 19,1974	
.167	270.176	14	56	NOV 19,1974	
.183	270.200	14	57	NOV 19,1974	
.200	270.153	14	58	NOV 19,1974	
.217	270.271	14	59	NOV 19,1974	
.233	270.271	15	00	NOV 19,1974	
.250	270.271	15	01	NOV 19,1974	
.267	269.631	15	02	NOV 19,1974	
.283	270.200	15	03	NOV 19,1974	
.300	270.271	15	04	NOV 19,1974	
.317	270.342	15	05	NOV 19,1974	
.333	270.413	15	06	NOV 19,1974	
.350	270.390	15	07	NOV 19,1974	
.367	270.390	15	08	NOV 19,1974	
.383	270.318	15	09	NOV 19,1974	
.400	270.366	15	10	NOV 19,1974	
.417	270.295	15	11	NOV 19,1974	
.433	270.437	15	12	NOV 19,1974	
.450	270.461	15	13	NOV 19,1974	
.467	270.413	15	14	NOV 19,1974	
.483	270.484	15	15	NOV 19,1974	
.500	270.437	15	16	NOV 19,1974	
.517	270.461	15	17	NOV 19,1974	
.533	270.461	15	18	NOV 19,1974	END SHUT-IN

33 POINTS REPORTED THIS RUN

JOB NUMBER
SPG-11210-D

DATE OF JO
11-19-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

PREPARED FOR

ATLANTIC RICHFIELD COMPANY

WELL NUMBER	FEDERAL SG-17
FIELD/LEASE	TRACT C-B SORGHUM GULCH
COUNTY/PARISH	RIO BLANCO
STATE	COLORADO
TYPE OF TEST	DRILL STEM
REFERENCE ELEV	GROUND LEVEL

ADDITIONAL INFORMATION

USED GAUGE NO. 196 WITH 1000 LB. ELEMENT

GAUGE DEPTH IS 1043.05 FEET INSIDE DP

GROUND LEVEL REFERENCE IS 7036 FEET

INITIAL HYDROSTATIC IS 265.783

FINAL HYDROSTATIC IS 270.263

TEST INTERVAL IS FROM 1017 FEET

(PACKER SET) TO 1067 FEET (TD)

INSIDE DP

II B-437

391 POINTS REPORTED THIS JOB

JOB NUMBER
SPG-11210-D

DATE OF JO
11-19-7

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RU
11-27-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
0.000	176.137	15 28	NOV 19,1974	FLOW TEST
.017	200.346	15 29	NOV 19,1974	IN DP
.033	206.227	15 30	NOV 19,1974	
.050	232.072	15 31	NOV 19,1974	
.067	237.075	15 32	NOV 19,1974	
.083	247.603	15 33	NOV 19,1974	
.100	255.357	15 34	NOV 19,1974	
.117	260.549	15 35	NOV 19,1974	
.133	264.130	15 36	NOV 19,1974	
.150	266.335	15 37	NOV 19,1974	
.167	267.236	15 38	NOV 19,1974	
.183	268.042	15 39	NOV 19,1974	
.200	268.540	15 40	NOV 19,1974	
.217	268.872	15 41	NOV 19,1974	
.233	268.920	15 42	NOV 19,1974	
.250	269.157	15 43	NOV 19,1974	
.267	269.157	15 44	NOV 19,1974	
.283	269.275	15 45	NOV 19,1974	
.300	269.299	15 46	NOV 19,1974	
.317	269.465	15 47	NOV 19,1974	
.333	269.536	15 48	NOV 19,1974	
.350	269.607	15 49	NOV 19,1974	
.367	269.465	15 50	NOV 19,1974	
.383	269.607	15 51	NOV 19,1974	
.400	269.939	15 52	NOV 19,1974	
.417	269.797	15 53	NOV 19,1974	
.433	269.797	15 54	NOV 19,1974	
.450	269.844	15 55	NOV 19,1974	
.467	269.987	15 56	NOV 19,1974	
.483	269.987	15 57	NOV 19,1974	
.500	269.773	15 58	NOV 19,1974	
.517	269.773	15 59	NOV 19,1974	
.533	270.105	16 00	NOV 19,1974	
.550	270.129	16 01	NOV 19,1974	
.567	269.797	16 02	NOV 19,1974	
.583	269.844	16 03	NOV 19,1974	
.600	269.821	16 04	NOV 19,1974	
.617	270.153	16 05	NOV 19,1974	
.633	270.129	16 06	NOV 19,1974	
.650	270.247	16 07	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JO
11-19-7

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RU
11-27-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
.683	270.034	16 09	NOV 19,1974	
.717	270.176	16 11	NOV 19,1974	
.750	270.413	16 13	NOV 19,1974	
.783	270.390	16 15	NOV 19,1974	
.817	270.247	16 17	NOV 19,1974	
.850	270.508	16 19	NOV 19,1974	
.883	270.437	16 21	NOV 19,1974	
.917	270.437	16 23	NOV 19,1974	
.950	270.366	16 25	NOV 19,1974	
.983	270.390	16 27	NOV 19,1974	
1.017	270.295	16 29	NOV 19,1974	
1.050	270.603	16 31	NOV 19,1974	
1.083	270.556	16 33	NOV 19,1974	
1.117	270.508	16 35	NOV 19,1974	
1.150	270.437	16 37	NOV 19,1974	
1.183	270.556	16 39	NOV 19,1974	
1.217	270.556	16 41	NOV 19,1974	
1.250	270.698	16 43	NOV 19,1974	
1.283	270.816	16 45	NOV 19,1974	
1.317	270.627	16 47	NOV 19,1974	
1.333	270.745	16 48	NOV 19,1974	END RECOVERY
1.350	270.864	16 49	NOV 19,1974	
1.367	270.769	16 50	NOV 19,1974	
1.383	270.745	16 51	NOV 19,1974	
1.400	270.864	16 52	NOV 19,1974	
1.417	270.911	16 53	NOV 19,1974	
1.433	270.650	16 54	NOV 19,1974	
1.450	270.935	16 55	NOV 19,1974	
1.467	270.745	16 56	NOV 19,1974	
1.483	270.698	16 57	NOV 19,1974	
1.500	270.627	16 58	NOV 19,1974	
1.517	270.674	16 59	NOV 19,1974	
1.533	270.698	17 00	NOV 19,1974	
1.550	270.745	17 01	NOV 19,1974	
1.567	270.698	17 02	NOV 19,1974	
1.583	270.698	17 03	NOV 19,1974	
1.600	270.769	17 04	NOV 19,1974	
1.617	270.627	17 05	NOV 19,1974	
1.633	270.793	17 06	NOV 19,1974	
1.650	270.911	17 07	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JO
11-19-7

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RU
11-27-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
1.667	270.722	17 08	NOV 19,1974	
1.683	270.840	17 09	NOV 19,1974	
1.700	270.982	17 10	NOV 19,1974	
1.717	270.816	17 11	NOV 19,1974	
1.733	270.840	17 12	NOV 19,1974	
1.750	271.030	17 13	NOV 19,1974	
1.767	270.982	17 14	NOV 19,1974	
1.783	270.888	17 15	NOV 19,1974	
1.800	270.840	17 16	NOV 19,1974	
1.817	271.030	17 17	NOV 19,1974	
1.833	270.864	17 18	NOV 19,1974	
1.850	270.840	17 19	NOV 19,1974	
1.867	270.840	17 20	NOV 19,1974	
1.883	270.745	17 21	NOV 19,1974	
1.900	271.030	17 22	NOV 19,1974	
1.917	270.982	17 23	NOV 19,1974	
1.933	270.888	17 24	NOV 19,1974	
1.950	270.888	17 25	NOV 19,1974	
1.967	270.888	17 26	NOV 19,1974	
1.983	270.816	17 27	NOV 19,1974	
2.000	271.030	17 28	NOV 19,1974	
2.017	271.054	17 29	NOV 19,1974	
2.033	270.888	17 30	NOV 19,1974	
2.050	270.935	17 31	NOV 19,1974	
2.067	270.982	17 32	NOV 19,1974	
2.083	270.935	17 33	NOV 19,1974	
2.100	271.006	17 34	NOV 19,1974	
2.117	271.172	17 35	NOV 19,1974	
2.133	271.030	17 36	NOV 19,1974	
2.150	271.101	17 37	NOV 19,1974	
2.167	271.077	17 38	NOV 19,1974	
2.183	271.030	17 39	NOV 19,1974	
2.200	270.982	17 40	NOV 19,1974	
2.217	270.982	17 41	NOV 19,1974	
2.233	271.030	17 42	NOV 19,1974	
2.250	271.030	17 43	NOV 19,1974	
2.267	271.125	17 44	NOV 19,1974	
2.283	271.172	17 45	NOV 19,1974	
2.300	271.101	17 46	NOV 19,1974	
2.317	271.077	17 47	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JO
11-19-7

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RU
11-27-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
2.333	271.196	17	48	NOV 19,1974	
2.350	271.030	17	49	NOV 19,1974	
2.367	271.077	17	50	NOV 19,1974	
2.383	271.054	17	51	NOV 19,1974	
2.400	271.148	17	52	NOV 19,1974	
2.417	271.172	17	53	NOV 19,1974	
2.433	271.172	17	54	NOV 19,1974	
2.450	271.125	17	55	NOV 19,1974	
2.467	271.125	17	56	NOV 19,1974	
2.483	271.196	17	57	NOV 19,1974	
2.500	271.291	17	58	NOV 19,1974	
2.517	271.362	17	59	NOV 19,1974	
2.533	271.267	18	00	NOV 19,1974	
2.550	271.765	18	01	NOV 19,1974	
2.567	271.362	18	02	NOV 19,1974	
2.583	271.717	18	03	NOV 19,1974	
2.600	271.314	18	04	NOV 19,1974	
2.617	271.955	18	05	NOV 19,1974	
2.633	271.291	18	06	NOV 19,1974	
2.650	271.978	18	07	NOV 19,1974	
2.667	271.314	18	08	NOV 19,1974	
2.683	271.907	18	09	NOV 19,1974	
2.700	271.551	18	10	NOV 19,1974	
2.717	271.480	18	11	NOV 19,1974	
2.733	271.955	18	12	NOV 19,1974	
2.750	271.646	18	13	NOV 19,1974	
2.767	271.741	18	14	NOV 19,1974	
2.783	271.433	18	15	NOV 19,1974	
2.800	271.717	18	16	NOV 19,1974	
2.817	272.879	18	17	NOV 19,1974	
2.833	271.623	18	18	NOV 19,1974	
2.850	271.646	18	19	NOV 19,1974	
2.867	271.931	18	20	NOV 19,1974	
2.883	271.551	18	21	NOV 19,1974	
2.900	271.433	18	22	NOV 19,1974	
2.917	271.551	18	23	NOV 19,1974	
2.933	271.860	18	24	NOV 19,1974	START AIR JET
2.950	281.747	18	25	NOV 19,1974	INSIDE DP
2.967	255.878	18	26	NOV 19,1974	
2.983	238.759	18	27	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JO
11-19-7

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RU
11-27-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
3.000	242.055	18 28	NOV 19,1974	
3.017	242.647	18 29	NOV 19,1974	
3.033	242.434	18 30	NOV 19,1974	
3.050	242.197	18 31	NOV 19,1974	
3.067	241.983	18 32	NOV 19,1974	
3.083	242.149	18 33	NOV 19,1974	
3.100	241.983	18 34	NOV 19,1974	
3.117	241.699	18 35	NOV 19,1974	
3.133	241.438	18 36	NOV 19,1974	
3.167	241.391	18 38	NOV 19,1974	
3.200	241.296	18 40	NOV 19,1974	
3.233	241.201	18 42	NOV 19,1974	
3.267	241.082	18 44	NOV 19,1974	
3.300	241.011	18 46	NOV 19,1974	
3.333	240.916	18 48	NOV 19,1974	
3.367	240.845	18 50	NOV 19,1974	
3.400	240.750	18 52	NOV 19,1974	
3.433	240.584	18 54	NOV 19,1974	
3.467	240.584	18 56	NOV 19,1974	
3.500	240.608	18 58	NOV 19,1974	
3.533	240.584	19 00	NOV 19,1974	
3.567	240.632	19 02	NOV 19,1974	
3.600	240.656	19 04	NOV 19,1974	
3.633	240.276	19 06	NOV 19,1974	
3.667	240.561	19 08	NOV 19,1974	
3.700	240.253	19 10	NOV 19,1974	
3.733	240.442	19 12	NOV 19,1974	
3.767	240.537	19 14	NOV 19,1974	
3.800	240.442	19 16	NOV 19,1974	
3.833	240.418	19 18	NOV 19,1974	
3.867	240.300	19 20	NOV 19,1974	
3.900	240.324	19 22	NOV 19,1974	END AIR JET
3.917	220.667	19 23	NOV 19,1974	INSIDE DP
3.933	244.378	19 24	NOV 19,1974	
3.950	247.010	19 25	NOV 19,1974	
3.967	255.475	19 26	NOV 19,1974	
3.983	260.763	19 27	NOV 19,1974	
4.000	264.011	19 28	NOV 19,1974	
4.017	265.790	19 29	NOV 19,1974	
4.033	266.857	19 30	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JO
11-19-7

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RU
11-27-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
4.050	267.331	19	31	NOV 19,1974	
4.067	267.070	19	32	NOV 19,1974	
4.083	268.090	19	33	NOV 19,1974	
4.100	268.327	19	34	NOV 19,1974	
4.117	268.730	19	35	NOV 19,1974	
4.133	269.109	19	36	NOV 19,1974	
4.150	269.228	19	37	NOV 19,1974	
4.167	269.038	19	38	NOV 19,1974	
4.183	268.730	19	39	NOV 19,1974	
4.200	269.346	19	40	NOV 19,1974	
4.217	269.417	19	41	NOV 19,1974	
4.233	269.370	19	42	NOV 19,1974	
4.250	269.157	19	43	NOV 19,1974	
4.267	269.655	19	44	NOV 19,1974	
4.283	269.512	19	45	NOV 19,1974	
4.300	269.536	19	46	NOV 19,1974	
4.317	269.678	19	47	NOV 19,1974	
4.333	269.631	19	48	NOV 19,1974	
4.350	269.892	19	49	NOV 19,1974	
4.367	269.607	19	50	NOV 19,1974	
4.383	270.081	19	51	NOV 19,1974	
4.400	269.915	19	52	NOV 19,1974	
4.417	270.010	19	53	NOV 19,1974	
4.433	269.963	19	54	NOV 19,1974	
4.450	270.176	19	55	NOV 19,1974	
4.467	270.271	19	56	NOV 19,1974	
4.483	270.390	19	57	NOV 19,1974	
4.500	270.295	19	58	NOV 19,1974	
4.517	270.437	19	59	NOV 19,1974	
4.533	270.508	20	00	NOV 19,1974	
4.550	270.461	20	01	NOV 19,1974	
4.567	270.366	20	02	NOV 19,1974	
4.583	270.769	20	03	NOV 19,1974	
4.600	270.698	20	04	NOV 19,1974	
4.617	270.627	20	05	NOV 19,1974	
4.633	270.722	20	06	NOV 19,1974	
4.650	270.603	20	07	NOV 19,1974	
4.667	270.722	20	08	NOV 19,1974	
4.683	270.745	20	09	NOV 19,1974	
4.700	270.722	20	10	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF J
11-19-

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF R
11-27-

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
4.717	270.864	20 11	NOV 19,1974	
4.733	270.722	20 12	NOV 19,1974	
4.750	270.888	20 13	NOV 19,1974	
4.767	270.911	20 14	NOV 19,1974	
4.783	270.935	20 15	NOV 19,1974	
4.800	271.006	20 16	NOV 19,1974	
4.817	271.101	20 17	NOV 19,1974	
4.833	270.959	20 18	NOV 19,1974	
4.850	271.006	20 19	NOV 19,1974	
4.867	270.911	20 20	NOV 19,1974	
4.883	270.959	20 21	NOV 19,1974	
4.900	270.911	20 22	NOV 19,1974	
4.917	271.125	20 23	NOV 19,1974	
4.933	271.006	20 24	NOV 19,1974	
4.950	271.148	20 25	NOV 19,1974	
4.967	271.196	20 26	NOV 19,1974	
4.983	271.196	20 27	NOV 19,1974	
5.000	271.243	20 28	NOV 19,1974	
5.017	271.362	20 29	NOV 19,1974	
5.033	271.148	20 30	NOV 19,1974	
5.050	271.172	20 31	NOV 19,1974	
5.067	271.148	20 32	NOV 19,1974	
5.083	271.196	20 33	NOV 19,1974	
5.100	271.267	20 34	NOV 19,1974	
5.117	271.243	20 35	NOV 19,1974	
5.133	271.220	20 36	NOV 19,1974	
5.150	271.409	20 37	NOV 19,1974	
5.167	271.338	20 38	NOV 19,1974	
5.183	274.563	20 39	NOV 19,1974	START 5 G/M
5.200	276.341	20 40	NOV 19,1974	DOWN DP
5.217	277.574	20 41	NOV 19,1974	
5.233	278.783	20 42	NOV 19,1974	
5.250	279.329	20 43	NOV 19,1974	
5.267	279.732	20 44	NOV 19,1974	
5.283	280.182	20 45	NOV 19,1974	
5.300	280.491	20 46	NOV 19,1974	
5.317	280.562	20 47	NOV 19,1974	
5.333	280.728	20 48	NOV 19,1974	
5.350	280.775	20 49	NOV 19,1974	
5.367	281.012	20 50	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JO
11-19-7

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RU
11-27-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
5.383	281.060	20	51	NOV 19,1974	
5.400	281.131	20	52	NOV 19,1974	END 5 G/M DOWN
5.417	280.040	20	53	NOV 19,1974	DP
5.433	277.029	20	54	NOV 19,1974	
5.450	275.274	20	55	NOV 19,1974	
5.467	273.994	20	56	NOV 19,1974	
5.483	273.259	20	57	NOV 19,1974	
5.500	272.950	20	58	NOV 19,1974	
5.517	272.618	20	59	NOV 19,1974	
5.533	272.666	21	00	NOV 19,1974	
5.550	272.358	21	01	NOV 19,1974	
5.567	272.358	21	02	NOV 19,1974	
5.583	274.681	21	03	NOV 19,1974	START 10 G/M
5.600	279.187	21	04	NOV 19,1974	DOWN DP
5.617	283.455	21	05	NOV 19,1974	
5.633	286.063	21	06	NOV 19,1974	
5.650	287.936	21	07	NOV 19,1974	
5.667	289.050	21	08	NOV 19,1974	
5.683	289.951	21	09	NOV 19,1974	
5.700	290.734	21	10	NOV 19,1974	
5.717	291.113	21	11	NOV 19,1974	
5.733	291.801	21	12	NOV 19,1974	
5.750	292.086	21	13	NOV 19,1974	
5.767	292.678	21	14	NOV 19,1974	
5.783	293.153	21	15	NOV 19,1974	
5.800	293.864	21	16	NOV 19,1974	
5.817	294.386	21	17	NOV 19,1974	END 10 G/M
5.833	293.437	21	18	NOV 19,1974	DOWN DP
5.850	287.154	21	19	NOV 19,1974	
5.867	282.222	21	20	NOV 19,1974	
5.883	279.115	21	21	NOV 19,1974	
5.900	276.815	21	22	NOV 19,1974	
5.917	275.274	21	23	NOV 19,1974	
5.933	274.468	21	24	NOV 19,1974	
5.950	274.207	21	25	NOV 19,1974	
5.967	273.614	21	26	NOV 19,1974	
5.983	273.472	21	27	NOV 19,1974	
6.000	275.654	21	28	NOV 19,1974	START 20 G/M
6.017	289.857	21	29	NOV 19,1974	DOWN DP
6.033	298.440	21	30	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF J
11-19-

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF R
11-27-

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
6.050	306.265	21	31	NOV 19,1974	
6.067	313.117	21	32	NOV 19,1974	
6.083	317.860	21	33	NOV 19,1974	
6.100	322.578	21	34	NOV 19,1974	
6.117	325.779	21	35	NOV 19,1974	
6.133	329.881	21	36	NOV 19,1974	
6.150	333.651	21	37	NOV 19,1974	
6.167	336.378	21	38	NOV 19,1974	
6.183	339.959	21	39	NOV 19,1974	
6.200	344.725	21	40	NOV 19,1974	
6.217	350.083	21	41	NOV 19,1974	
6.233	354.921	21	42	NOV 19,1974	END 20 G/M
6.250	349.586	21	43	NOV 19,1974	DOWN DP
6.267	335.880	21	44	NOV 19,1974	
6.283	323.716	21	45	NOV 19,1974	
6.300	313.521	21	46	NOV 19,1974	
6.317	305.364	21	47	NOV 19,1974	
6.333	297.397	21	48	NOV 19,1974	
6.350	291.991	21	49	NOV 19,1974	
6.367	287.509	21	50	NOV 19,1974	
6.383	283.976	21	51	NOV 19,1974	
6.400	281.202	21	52	NOV 19,1974	
6.417	307.854	21	53	NOV 19,1974	FILL DP
6.433	315.512	21	54	NOV 19,1974	
6.450	366.089	21	55	NOV 19,1974	
6.467	367.938	21	56	NOV 19,1974	
6.483	384.441	21	57	NOV 19,1974	
6.500	421.193	21	58	NOV 19,1974	
6.517	427.553	21	59	NOV 19,1974	
6.533	439.657	22	00	NOV 19,1974	
6.550	444.077	22	01	NOV 19,1974	
6.567	446.441	22	02	NOV 19,1974	
6.583	448.924	22	03	NOV 19,1974	
6.600	451.075	22	04	NOV 19,1974	
6.617	452.942	22	05	NOV 19,1974	
6.633	454.243	22	06	NOV 19,1974	
6.650	455.046	22	07	NOV 19,1974	DP FILLED
6.667	435.614	22	08	NOV 19,1974	
6.683	417.068	22	09	NOV 19,1974	
6.700	399.901	22	10	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF J
11-19-

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF R
11-27-

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
6.717	383.967	22	11	NOV 19,1974	
6.733	369.503	22	12	NOV 19,1974	
6.750	356.817	22	13	NOV 19,1974	
6.767	344.559	22	14	NOV 19,1974	
6.783	334.434	22	15	NOV 19,1974	
6.800	324.380	22	16	NOV 19,1974	INJECT 20 G/M
6.817	318.239	22	17	NOV 19,1974	DOWN ANNULUS
6.833	311.315	22	18	NOV 19,1974	
6.850	304.818	22	19	NOV 19,1974	
6.867	298.393	22	20	NOV 19,1974	
6.883	293.461	22	21	NOV 19,1974	
6.900	289.809	22	22	NOV 19,1974	
6.917	286.324	22	23	NOV 19,1974	
6.933	283.573	22	24	NOV 19,1974	
6.950	281.700	22	25	NOV 19,1974	
6.967	280.088	22	26	NOV 19,1974	
6.983	279.258	22	27	NOV 19,1974	
7.000	278.025	22	28	NOV 19,1974	
7.017	277.764	22	29	NOV 19,1974	
7.033	277.218	22	30	NOV 19,1974	END 20 G/M
7.050	276.887	22	31	NOV 19,1974	DOWN ANNULUS
7.067	276.555	22	32	NOV 19,1974	
7.083	276.246	22	33	NOV 19,1974	
7.100	276.223	22	34	NOV 19,1974	
7.117	276.057	22	35	NOV 19,1974	
7.133	275.820	22	36	NOV 19,1974	
7.150	275.725	22	37	NOV 19,1974	
7.167	275.701	22	38	NOV 19,1974	
7.183	275.606	22	39	NOV 19,1974	
7.200	275.559	22	40	NOV 19,1974	
7.217	275.488	22	41	NOV 19,1974	END TEST

391 POINTS REPORTED THIS RUN

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

PREPARED FOR

ATLANTIC RICHFIELD COMPANY

WELL NUMBER	FEDERAL SG-17
FIELD/LEASE	TRACT C-B SORGHUM GULCH
COUNTY/PARISH	RIO BLANCO
STATE	COLORADO
TYPE OF TEST	DRILL STEM
REFERENCE ELEV	GROUND LEVEL

ADDITIONAL INFORMATION

USED GAUGE NO. 204 WITH 1000 LB. ELEMENT

GAUGE DEPTH IS 977.66 FEET OUTSIDE

DP - IN ANNULUS

GROUND LEVEL REFERENCE IS 7036 FEET

TEST INTERVAL IS FROM ZERO FEET

(SURFACE) TO 1017 FEET (PACKER DEPTH)

INSIDE ANNULUS

II B-448

244 POINTS REPORTED THIS JOB

JOB NUMBER
SPG-11210-D

DATE OF JO
11-19-7

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RU
11-27-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
0.000	229.942	14	34	NOV 19,1974	INITIAL HYDRO.
.200	232.411	14	46	NOV 19,1974	INITIAL SHUTIN
.217	232.617	14	47	NOV 19,1974	
.233	232.731	14	48	NOV 19,1974	
.250	232.799	14	49	NOV 19,1974	
.267	232.868	14	50	NOV 19,1974	
.283	232.959	14	51	NOV 19,1974	
.300	233.028	14	52	NOV 19,1974	
.333	233.074	14	54	NOV 19,1974	
.367	233.142	14	56	NOV 19,1974	
.400	233.188	14	58	NOV 19,1974	
.467	233.234	15	02	NOV 19,1974	
.533	233.257	15	06	NOV 19,1974	
.600	233.302	15	10	NOV 19,1974	
.667	233.325	15	14	NOV 19,1974	
.683	233.348	15	15	NOV 19,1974	
.700	233.348	15	16	NOV 19,1974	
.717	233.348	15	17	NOV 19,1974	
.733	233.348	15	18	NOV 19,1974	END SHUT-IN
.900	233.668	15	28	NOV 19,1974	START FLOW
.917	233.645	15	29	NOV 19,1974	INSIDE DP
.933	233.645	15	30	NOV 19,1974	
.950	233.600	15	31	NOV 19,1974	
.967	233.600	15	32	NOV 19,1974	
1.000	233.577	15	34	NOV 19,1974	
1.033	233.600	15	36	NOV 19,1974	
1.100	233.622	15	40	NOV 19,1974	
1.167	233.668	15	44	NOV 19,1974	
1.233	233.737	15	48	NOV 19,1974	
1.300	233.714	15	52	NOV 19,1974	
1.367	233.760	15	56	NOV 19,1974	
1.433	233.760	16	00	NOV 19,1974	
1.500	233.828	16	04	NOV 19,1974	
1.567	233.828	16	08	NOV 19,1974	
1.700	233.920	16	16	NOV 19,1974	
1.833	233.965	16	24	NOV 19,1974	
1.967	234.011	16	32	NOV 19,1974	
2.100	234.102	16	40	NOV 19,1974	
2.183	234.102	16	45	NOV 19,1974	
2.200	234.125	16	46	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RUN
11-27-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
2.217	234.148	16	47	NOV 19,1974	
2.233	234.148	16	48	NOV 19,1974	END RECOVERY
2.250	234.148	16	49	NOV 19,1974	INSIDE DP
2.267	234.148	16	50	NOV 19,1974	THIS GAUGE IN
2.283	234.171	16	51	NOV 19,1974	ANNULUS
2.300	234.171	16	52	NOV 19,1974	
2.317	234.171	16	53	NOV 19,1974	
2.333	234.171	16	54	NOV 19,1974	
2.350	234.171	16	55	NOV 19,1974	
2.367	234.171	16	56	NOV 19,1974	
2.500	234.240	17	04	NOV 19,1974	
2.633	234.262	17	12	NOV 19,1974	
2.767	234.354	17	20	NOV 19,1974	
2.900	234.354	17	28	NOV 19,1974	
3.033	234.445	17	36	NOV 19,1974	
3.167	234.514	17	44	NOV 19,1974	
3.300	234.537	17	52	NOV 19,1974	
3.433	234.560	18	00	NOV 19,1974	
3.567	234.628	18	08	NOV 19,1974	
3.700	234.697	18	16	NOV 19,1974	
3.733	234.697	18	18	NOV 19,1974	
3.767	234.697	18	20	NOV 19,1974	
3.783	234.697	18	21	NOV 19,1974	
3.800	234.697	18	22	NOV 19,1974	
3.817	234.697	18	23	NOV 19,1974	
3.833	234.697	18	24	NOV 19,1974	START AIR JET
3.850	234.697	18	25	NOV 19,1974	DOWN DP
3.867	234.743	18	26	NOV 19,1974	
3.883	234.788	18	27	NOV 19,1974	
3.900	234.834	18	28	NOV 19,1974	
3.917	234.880	18	29	NOV 19,1974	
3.933	234.994	18	30	NOV 19,1974	
3.950	235.063	18	31	NOV 19,1974	
3.967	235.085	18	32	NOV 19,1974	
3.983	235.085	18	33	NOV 19,1974	
4.000	235.131	18	34	NOV 19,1974	
4.017	235.177	18	35	NOV 19,1974	
4.033	235.223	18	36	NOV 19,1974	
4.050	235.223	18	37	NOV 19,1974	
4.067	235.291	18	38	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RUN
11-27-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
4.083	235.314	18	39	NOV 19,1974	
4.117	235.291	18	41	NOV 19,1974	
4.150	235.291	18	43	NOV 19,1974	
4.217	235.291	18	47	NOV 19,1974	
4.283	235.291	18	51	NOV 19,1974	
4.417	235.314	18	59	NOV 19,1974	
4.550	235.337	19	07	NOV 19,1974	
4.683	235.360	19	15	NOV 19,1974	
4.700	235.360	19	16	NOV 19,1974	
4.717	235.405	19	17	NOV 19,1974	
4.733	235.405	19	18	NOV 19,1974	
4.750	235.451	19	19	NOV 19,1974	
4.767	235.451	19	20	NOV 19,1974	
4.783	235.451	19	21	NOV 19,1974	
4.800	235.451	19	22	NOV 19,1974	END AIR JET
4.817	235.474	19	23	NOV 19,1974	DOWN ANNULUS
4.833	235.474	19	24	NOV 19,1974	
4.850	235.474	19	25	NOV 19,1974	
4.867	235.474	19	26	NOV 19,1974	
4.883	235.474	19	27	NOV 19,1974	
4.900	235.451	19	28	NOV 19,1974	
4.917	235.428	19	29	NOV 19,1974	
4.933	235.474	19	30	NOV 19,1974	
4.967	235.360	19	32	NOV 19,1974	
5.000	235.337	19	34	NOV 19,1974	
5.033	235.337	19	36	NOV 19,1974	
5.100	235.291	19	40	NOV 19,1974	
5.167	235.268	19	44	NOV 19,1974	
5.233	235.291	19	48	NOV 19,1974	
5.300	235.245	19	52	NOV 19,1974	
5.433	235.291	20	00	NOV 19,1974	
5.567	235.314	20	08	NOV 19,1974	
5.717	235.360	20	17	NOV 19,1974	
5.850	235.360	20	25	NOV 19,1974	
5.983	235.383	20	33	NOV 19,1974	
6.000	235.428	20	34	NOV 19,1974	
6.017	235.428	20	35	NOV 19,1974	
6.033	235.428	20	36	NOV 19,1974	
6.050	235.428	20	37	NOV 19,1974	
6.067	235.451	20	38	NOV 19,1974	START 5 G/M

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RUN
11-27-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
6.083	235.451	20	39	NOV 19,1974	DOWN DP
6.100	235.451	20	40	NOV 19,1974	
6.117	235.474	20	41	NOV 19,1974	
6.133	235.474	20	42	NOV 19,1974	
6.150	235.497	20	43	NOV 19,1974	
6.167	235.451	20	44	NOV 19,1974	
6.183	235.497	20	45	NOV 19,1974	
6.200	235.520	20	46	NOV 19,1974	
6.217	235.543	20	47	NOV 19,1974	
6.233	235.543	20	48	NOV 19,1974	
6.250	235.543	20	49	NOV 19,1974	
6.267	235.565	20	50	NOV 19,1974	
6.283	235.543	20	51	NOV 19,1974	
6.300	235.543	20	52	NOV 19,1974	END 5 G/M
6.317	235.565	20	53	NOV 19,1974	DOWN DP
6.333	235.611	20	54	NOV 19,1974	
6.350	235.588	20	55	NOV 19,1974	
6.367	235.565	20	56	NOV 19,1974	
6.383	235.588	20	57	NOV 19,1974	
6.400	235.588	20	58	NOV 19,1974	
6.417	235.588	20	59	NOV 19,1974	
6.433	235.588	21	00	NOV 19,1974	
6.450	235.588	21	01	NOV 19,1974	
6.467	235.588	21	02	NOV 19,1974	
6.483	235.588	21	03	NOV 19,1974	START 10 G/M
6.500	235.588	21	04	NOV 19,1974	DOWN DP
6.517	235.634	21	05	NOV 19,1974	
6.533	235.634	21	06	NOV 19,1974	
6.550	235.634	21	07	NOV 19,1974	
6.567	235.634	21	08	NOV 19,1974	
6.583	235.725	21	09	NOV 19,1974	
6.600	235.725	21	10	NOV 19,1974	
6.617	235.725	21	11	NOV 19,1974	
6.633	235.725	21	12	NOV 19,1974	
6.650	235.748	21	13	NOV 19,1974	
6.667	235.771	21	14	NOV 19,1974	
6.683	235.771	21	15	NOV 19,1974	
6.700	235.771	21	16	NOV 19,1974	
6.717	235.817	21	17	NOV 19,1974	END 10 G/M
6.733	235.817	21	18	NOV 19,1974	DOWN DP

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RUN
11-27-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
6.750	235.817	21	19	NOV 19,1974	
6.767	235.817	21	20	NOV 19,1974	
6.783	235.817	21	21	NOV 19,1974	
6.800	235.817	21	22	NOV 19,1974	
6.817	235.771	21	23	NOV 19,1974	
6.833	235.771	21	24	NOV 19,1974	
6.850	235.771	21	25	NOV 19,1974	
6.867	235.817	21	26	NOV 19,1974	
6.883	235.817	21	27	NOV 19,1974	
6.900	235.840	21	28	NOV 19,1974	START 20 G/M
6.917	235.840	21	29	NOV 19,1974	DOWN DP
6.933	235.863	21	30	NOV 19,1974	
6.950	235.885	21	31	NOV 19,1974	
6.967	235.885	21	32	NOV 19,1974	
6.983	235.931	21	33	NOV 19,1974	
7.000	235.931	21	34	NOV 19,1974	
7.017	235.954	21	35	NOV 19,1974	
7.033	235.977	21	36	NOV 19,1974	
7.050	235.977	21	37	NOV 19,1974	
7.067	236.023	21	38	NOV 19,1974	
7.083	236.046	21	39	NOV 19,1974	
7.100	236.046	21	40	NOV 19,1974	
7.117	236.068	21	41	NOV 19,1974	
7.133	236.068	21	42	NOV 19,1974	END 20 G/M
7.150	236.068	21	43	NOV 19,1974	DOWN DP
7.167	236.068	21	44	NOV 19,1974	
7.183	236.068	21	45	NOV 19,1974	
7.200	236.114	21	46	NOV 19,1974	
7.217	236.046	21	47	NOV 19,1974	
7.233	236.046	21	48	NOV 19,1974	
7.250	236.046	21	49	NOV 19,1974	
7.267	236.091	21	50	NOV 19,1974	
7.283	236.046	21	51	NOV 19,1974	
7.300	236.023	21	52	NOV 19,1974	
7.317	236.091	21	53	NOV 19,1974	FILL DP
7.333	236.114	21	54	NOV 19,1974	
7.350	236.114	21	55	NOV 19,1974	
7.367	236.091	21	56	NOV 19,1974	
7.383	236.183	21	57	NOV 19,1974	
7.400	236.228	21	58	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RUN
11-27-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
7.417	236.228	21	59	NOV 19,1974	
7.433	237.120	22	00	NOV 19,1974	
7.450	237.897	22	01	NOV 19,1974	
7.467	238.331	22	02	NOV 19,1974	
7.483	238.606	22	03	NOV 19,1974	
7.500	239.040	22	04	NOV 19,1974	
7.517	239.452	22	05	NOV 19,1974	
7.533	239.680	22	06	NOV 19,1974	
7.550	239.680	22	07	NOV 19,1974	DP FILLED
7.567	239.474	22	08	NOV 19,1974	
7.583	239.269	22	09	NOV 19,1974	
7.600	239.063	22	10	NOV 19,1974	
7.617	238.812	22	11	NOV 19,1974	
7.633	238.583	22	12	NOV 19,1974	
7.650	238.423	22	13	NOV 19,1974	
7.667	238.286	22	14	NOV 19,1974	
7.683	238.149	22	15	NOV 19,1974	
7.700	238.034	22	16	NOV 19,1974	START 2/ G/M
7.717	239.863	22	17	NOV 19,1974	DOWN ANNULUS
7.733	242.012	22	18	NOV 19,1974	
7.750	243.864	22	19	NOV 19,1974	
7.767	245.578	22	20	NOV 19,1974	
7.783	247.315	22	21	NOV 19,1974	
7.800	249.007	22	22	NOV 19,1974	
7.817	250.630	22	23	NOV 19,1974	
7.833	251.933	22	24	NOV 19,1974	
7.850	253.282	22	25	NOV 19,1974	
7.867	254.402	22	26	NOV 19,1974	
7.883	255.499	22	27	NOV 19,1974	
7.900	256.414	22	28	NOV 19,1974	
7.917	257.397	22	29	NOV 19,1974	
7.933	258.197	22	30	NOV 19,1974	END 20 G/M
7.950	258.059	22	31	NOV 19,1974	DOWN ANNULUS
7.967	257.145	22	32	NOV 19,1974	
7.983	256.002	22	33	NOV 19,1974	
8.000	254.813	22	34	NOV 19,1974	
8.017	253.670	22	35	NOV 19,1974	
8.033	252.573	22	36	NOV 19,1974	
8.050	251.522	22	37	NOV 19,1974	
8.067	250.516	22	38	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RUN
11-27-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
8.083	249.578	22	39	NOV 19,1974	
8.100	248.756	22	40	NOV 19,1974	
8.117	247.247	22	41	NOV 19,1974	END TEST
8.317	234.011	22	53	NOV 19,1974	FINAL HYDRO.

244 POINTS REPORTED THIS RUN

Job No. SPG-11210-D Date 11-18-74 Run DST #7 Office CASPER

Customer ARCO ET AL Location SORGHUM GULCH

State COLORADO County/~~Parish~~ RIO BLANCO

Well 56 No. 17 Field TRACT C-b

USE MILITARY TIME FOR ALL TIMES

	Time	Date	Time	Date	Time Charged
Arrive: Well/~~Dock~~	1. .0600	11-18-74	2.		
Depart: Well/~~Dock~~	1. .0300	11-19-74	2.		Hrs.
Gauge Start in Hole	1. .1219	11-18-74	2.		
Gauge Out of Hole	1. .0220	11-19-74	2.		Hrs.

No. Trips 1 Miles 45 Total Mileage 90

Top Gauge # 204 Element # 32761 Range 1000# Time Mode [illegible]

Btm. Gauge # 196 Element # 30951 Range 1000# Time Mode 1 min.

Type Tool JOHNSTON HYD Test Depth 1017'-1067' Zero Point GROUND LEVEL

Bottom Packer Depth 1017' Tail Pipe Depth 1067' Top Gauge Depth 977.66'

Bottom Hole Temp. 90°F Atmos. Temp. 56.3° (13.5°C) Bottom Gauge Depth 1043.05'

TIME INFORMATION	Time	Date	PRESSURE INFORMATION	
On Bottom	.1348	11-18-74	Initial Hydrostatic Mud	
Packer Set	.1438-.1447	11-18-74	Initial Draw Down	
Initial Open	.1438-.1447	11-18-74	Initial Build-Up	
Initial Shut-In	.1448-.1518	11-18-74	Final Flow	
Start Flow	.1528-.1608	11-18-74	Final Build-Up	
Final Shut-In	.2241-.2251	11-18-74	Final Hydrostatic Mud	
Packer Unseated	.2252	11-18-74	Mud Weight	

TIME OF SURFACE NULLS

#204 Top Gauge .1217 (.1218:25) — .0105 #196 Bottom Gauge .1145 (.1146.18) — .0222 (11-19-74)

Remarks 10-PRE-SET NULLS. TIMES OFF STAR RECORDER.. ROTARY TABLE 9' ABOVE GL.

(LEFT LOCATION FOR 3 HRS. AM)

SP-423 II B-456 BILL FOSTER Operator

→ Howard Dennis / JRM

SPERRY-SUN

POST OFFICE BOX 36363 HOUSTON, TEXAS 77036 (713) 494-3021

J. A. Fouché
President

December 24, 1974

RECEIVED
DEC 30 1974
A. J. ROGERS

Mr. Frederick R. Scheerer
Atlantic-Richfield Company
1500 Security Life Building
Denver, Colorado 80202

Dear Sir:

Enclosed is the original of data printout of our Precision Pressure Gauge Drill Stem Test Job SPG-11210-D performed on your Federal SG-17 Well, Tract C-b, Piceance Creek Basin, Sorgmum Gulch, Rio Blanco County, Colorado on November 24, 1974.

This report is being resubmitted to include all data points.

Thank you for this opportunity to be of service.

Very truly yours,

SPERRY-SUN

Carl Kisinger, Jr.
Manager, Pressure Services

CK:tk
Enclosure

1017-1057

AJR

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

PREPARED FOR

ATLANTIC RICHFIELD COMPANY

WELL NUMBER	FEDERAL SG-17
FIELD/LEASE	TRACT C-B SORGHUM GULCH
COUNTY/PARISH	RIO BLANCO
STATE	COLORADO
TYPE OF TEST	DRILL STEM
REFERENCE ELEV	GROUND LEVEL

ADDITIONAL INFORMATION

USED GAUGE NO. 196 WITH 1000 LB. ELEMENT

GAUGE DEPTH IS 1043.05 FEET INSIDE DP

GROUND LEVEL REFERENCE IS 7036 FEET

INITIAL HYDROSTATIC IS 265.783

FINAL HYDROSTATIC IS 270.263

TEST INTERVAL IS FROM 1017 FEET

(PACKER SET) TO 1067 FEET (TD)

INSIDE DP

II B-458

433 POINTS REPORTED THIS JOB

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RUN
12-16-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
0.000	176.121	15	28	NOV 19,1974	FLOW TEST
.017	200.344	15	29	NOV 19,1974	IN DP
.033	206.222	15	30	NOV 19,1974	
.050	232.056	15	31	NOV 19,1974	
.067	237.057	15	32	NOV 19,1974	
.083	247.581	15	33	NOV 19,1974	
.100	255.354	15	34	NOV 19,1974	
.117	260.545	15	35	NOV 19,1974	
.133	264.124	15	36	NOV 19,1974	
.150	266.328	15	37	NOV 19,1974	
.167	267.229	15	38	NOV 19,1974	
.183	268.035	15	39	NOV 19,1974	
.200	268.532	15	40	NOV 19,1974	
.217	268.864	15	41	NOV 19,1974	
.233	268.912	15	42	NOV 19,1974	
.250	269.149	15	43	NOV 19,1974	
.267	269.149	15	44	NOV 19,1974	
.283	269.267	15	45	NOV 19,1974	
.300	269.291	15	46	NOV 19,1974	
.317	269.457	15	47	NOV 19,1974	
.333	269.528	15	48	NOV 19,1974	
.350	269.599	15	49	NOV 19,1974	
.367	269.457	15	50	NOV 19,1974	
.383	269.599	15	51	NOV 19,1974	
.400	269.931	15	52	NOV 19,1974	
.417	269.789	15	53	NOV 19,1974	
.433	269.789	15	54	NOV 19,1974	
.450	269.836	15	55	NOV 19,1974	
.467	269.978	15	56	NOV 19,1974	
.483	269.978	15	57	NOV 19,1974	
.500	269.765	15	58	NOV 19,1974	
.517	269.765	15	59	NOV 19,1974	
.533	270.097	16	00	NOV 19,1974	
.550	270.120	16	01	NOV 19,1974	
.567	269.789	16	02	NOV 19,1974	
.583	269.836	16	03	NOV 19,1974	
.600	269.812	16	04	NOV 19,1974	
.617	270.144	16	05	NOV 19,1974	
.633	270.120	16	06	NOV 19,1974	
.650	270.239	16	07	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RUN
12-16-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
.667	270.026	16	08	NOV 19,1974	
.683	270.026	16	09	NOV 19,1974	
.700	270.239	16	10	NOV 19,1974	
.717	270.168	16	11	NOV 19,1974	
.733	270.144	16	12	NOV 19,1974	
.750	270.405	16	13	NOV 19,1974	
.767	270.310	16	14	NOV 19,1974	
.783	270.381	16	15	NOV 19,1974	
.800	270.310	16	16	NOV 19,1974	
.817	270.239	16	17	NOV 19,1974	
.833	270.381	16	18	NOV 19,1974	
.850	270.500	16	19	NOV 19,1974	
.867	270.310	16	20	NOV 19,1974	
.883	270.428	16	21	NOV 19,1974	
.900	270.571	16	22	NOV 19,1974	
.917	270.428	16	23	NOV 19,1974	
.933	270.310	16	24	NOV 19,1974	
.950	270.357	16	25	NOV 19,1974	
.967	270.452	16	26	NOV 19,1974	
.983	270.381	16	27	NOV 19,1974	
1.000	270.310	16	28	NOV 19,1974	
1.017	270.286	16	29	NOV 19,1974	
1.033	270.405	16	30	NOV 19,1974	
1.050	270.594	16	31	NOV 19,1974	
1.067	270.452	16	32	NOV 19,1974	
1.083	270.547	16	33	NOV 19,1974	
1.100	270.452	16	34	NOV 19,1974	
1.117	270.500	16	35	NOV 19,1974	
1.133	270.523	16	36	NOV 19,1974	
1.150	270.428	16	37	NOV 19,1974	
1.167	270.594	16	38	NOV 19,1974	
1.183	270.547	16	39	NOV 19,1974	
1.200	270.689	16	40	NOV 19,1974	
1.217	270.547	16	41	NOV 19,1974	
1.233	270.689	16	42	NOV 19,1974	
1.250	270.689	16	43	NOV 19,1974	
1.267	270.571	16	44	NOV 19,1974	
1.283	270.808	16	45	NOV 19,1974	
1.300	270.737	16	46	NOV 19,1974	
1.317	270.618	16	47	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RUN
12-16-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
1.333	270.737	16	48	NOV 19,1974	END RECOVERY
1.350	270.855	16	49	NOV 19,1974	
1.367	270.760	16	50	NOV 19,1974	
1.383	270.737	16	51	NOV 19,1974	
1.400	270.855	16	52	NOV 19,1974	
1.417	270.902	16	53	NOV 19,1974	
1.433	270.642	16	54	NOV 19,1974	
1.450	270.926	16	55	NOV 19,1974	
1.467	270.737	16	56	NOV 19,1974	
1.483	270.689	16	57	NOV 19,1974	
1.500	270.618	16	58	NOV 19,1974	
1.517	270.665	16	59	NOV 19,1974	
1.533	270.689	17	00	NOV 19,1974	
1.550	270.737	17	01	NOV 19,1974	
1.567	270.689	17	02	NOV 19,1974	
1.583	270.689	17	03	NOV 19,1974	
1.600	270.760	17	04	NOV 19,1974	
1.617	270.618	17	05	NOV 19,1974	
1.633	270.784	17	06	NOV 19,1974	
1.650	270.902	17	07	NOV 19,1974	
1.667	270.713	17	08	NOV 19,1974	
1.683	270.831	17	09	NOV 19,1974	
1.700	270.974	17	10	NOV 19,1974	
1.717	270.808	17	11	NOV 19,1974	
1.733	270.831	17	12	NOV 19,1974	
1.750	271.021	17	13	NOV 19,1974	
1.767	270.974	17	14	NOV 19,1974	
1.783	270.879	17	15	NOV 19,1974	
1.800	270.831	17	16	NOV 19,1974	
1.817	271.021	17	17	NOV 19,1974	
1.833	270.855	17	18	NOV 19,1974	
1.850	270.831	17	19	NOV 19,1974	
1.867	270.831	17	20	NOV 19,1974	
1.883	270.737	17	21	NOV 19,1974	
1.900	271.021	17	22	NOV 19,1974	
1.917	270.974	17	23	NOV 19,1974	
1.933	270.879	17	24	NOV 19,1974	
1.950	270.879	17	25	NOV 19,1974	
1.967	270.879	17	26	NOV 19,1974	
1.983	270.808	17	27	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RUN
12-16-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
2.000	271.021	17	28	NOV 19,1974	
2.017	271.045	17	29	NOV 19,1974	
2.033	270.879	17	30	NOV 19,1974	
2.050	270.926	17	31	NOV 19,1974	
2.067	270.974	17	32	NOV 19,1974	
2.083	270.926	17	33	NOV 19,1974	
2.100	270.997	17	34	NOV 19,1974	
2.117	271.163	17	35	NOV 19,1974	
2.133	271.021	17	36	NOV 19,1974	
2.150	271.092	17	37	NOV 19,1974	
2.167	271.068	17	38	NOV 19,1974	
2.183	271.021	17	39	NOV 19,1974	
2.200	270.974	17	40	NOV 19,1974	
2.217	270.974	17	41	NOV 19,1974	
2.233	271.021	17	42	NOV 19,1974	
2.250	271.021	17	43	NOV 19,1974	
2.267	271.116	17	44	NOV 19,1974	
2.283	271.163	17	45	NOV 19,1974	
2.300	271.092	17	46	NOV 19,1974	
2.317	271.068	17	47	NOV 19,1974	
2.333	271.187	17	48	NOV 19,1974	
2.350	271.021	17	49	NOV 19,1974	
2.367	271.068	17	50	NOV 19,1974	
2.383	271.045	17	51	NOV 19,1974	
2.400	271.139	17	52	NOV 19,1974	
2.417	271.163	17	53	NOV 19,1974	
2.433	271.163	17	54	NOV 19,1974	
2.450	271.116	17	55	NOV 19,1974	
2.467	271.116	17	56	NOV 19,1974	
2.483	271.187	17	57	NOV 19,1974	
2.500	271.282	17	58	NOV 19,1974	
2.517	271.353	17	59	NOV 19,1974	
2.533	271.258	18	00	NOV 19,1974	
2.550	271.756	18	01	NOV 19,1974	
2.567	271.353	18	02	NOV 19,1974	
2.583	271.708	18	03	NOV 19,1974	
2.600	271.305	18	04	NOV 19,1974	
2.617	271.945	18	05	NOV 19,1974	
2.633	271.282	18	06	NOV 19,1974	
2.650	271.969	18	07	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RUN
12-16-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
2.667	271.305	18	08	NOV 19,1974	
2.683	271.898	18	09	NOV 19,1974	
2.700	271.542	18	10	NOV 19,1974	
2.717	271.471	18	11	NOV 19,1974	
2.733	271.945	18	12	NOV 19,1974	
2.750	271.637	18	13	NOV 19,1974	
2.767	271.732	18	14	NOV 19,1974	
2.783	271.424	18	15	NOV 19,1974	
2.800	271.708	18	16	NOV 19,1974	
2.817	272.870	18	17	NOV 19,1974	
2.833	271.614	18	18	NOV 19,1974	
2.850	271.637	18	19	NOV 19,1974	
2.867	271.922	18	20	NOV 19,1974	
2.883	271.542	18	21	NOV 19,1974	
2.900	271.424	18	22	NOV 19,1974	
2.917	271.542	18	23	NOV 19,1974	
2.933	271.851	18	24	NOV 19,1974	START AIR JET
2.950	281.734	18	25	NOV 19,1974	INSIDE DP
2.967	255.876	18	26	NOV 19,1974	
2.983	238.740	18	27	NOV 19,1974	
3.000	242.034	18	28	NOV 19,1974	
3.017	242.627	18	29	NOV 19,1974	
3.033	242.414	18	30	NOV 19,1974	
3.050	242.177	18	31	NOV 19,1974	
3.067	241.963	18	32	NOV 19,1974	
3.083	242.129	18	33	NOV 19,1974	
3.100	241.963	18	34	NOV 19,1974	
3.117	241.679	18	35	NOV 19,1974	
3.133	241.418	18	36	NOV 19,1974	
3.150	241.371	18	37	NOV 19,1974	
3.167	241.229	18	38	NOV 19,1974	
3.183	241.323	18	39	NOV 19,1974	
3.200	241.276	18	40	NOV 19,1974	
3.217	241.205	18	41	NOV 19,1974	
3.233	241.181	18	42	NOV 19,1974	
3.250	241.442	18	43	NOV 19,1974	
3.267	241.063	18	44	NOV 19,1974	
3.283	241.039	18	45	NOV 19,1974	
3.300	240.992	18	46	NOV 19,1974	
3.317	241.015	18	47	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RUN
12-16-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
3.333	240.897	18	48	NOV 19,1974	
3.350	240.920	18	49	NOV 19,1974	
3.367	240.826	18	50	NOV 19,1974	
3.383	240.826	18	51	NOV 19,1974	
3.400	240.731	18	52	NOV 19,1974	
3.417	240.660	18	53	NOV 19,1974	
3.433	240.565	18	54	NOV 19,1974	
3.450	240.802	18	55	NOV 19,1974	
3.467	240.565	18	56	NOV 19,1974	
3.483	240.683	18	57	NOV 19,1974	
3.500	240.589	18	58	NOV 19,1974	
3.517	240.541	18	59	NOV 19,1974	
3.533	240.565	19	00	NOV 19,1974	
3.550	240.541	19	01	NOV 19,1974	
3.567	240.612	19	02	NOV 19,1974	
3.583	240.778	19	03	NOV 19,1974	
3.600	240.636	19	04	NOV 19,1974	
3.617	240.636	19	05	NOV 19,1974	
3.633	240.257	19	06	NOV 19,1974	
3.650	240.873	19	07	NOV 19,1974	
3.667	240.541	19	08	NOV 19,1974	
3.683	240.399	19	09	NOV 19,1974	
3.700	240.233	19	10	NOV 19,1974	
3.717	240.589	19	11	NOV 19,1974	
3.733	240.423	19	12	NOV 19,1974	
3.750	240.233	19	13	NOV 19,1974	
3.767	240.518	19	14	NOV 19,1974	
3.783	240.352	19	15	NOV 19,1974	
3.800	240.423	19	16	NOV 19,1974	
3.817	240.423	19	17	NOV 19,1974	
3.833	240.399	19	18	NOV 19,1974	
3.850	240.399	19	19	NOV 19,1974	
3.867	240.281	19	20	NOV 19,1974	
3.883	240.233	19	21	NOV 19,1974	
3.900	240.304	19	22	NOV 19,1974	END AIR JET
3.917	220.656	19	23	NOV 19,1974	INSIDE DP
3.933	244.357	19	24	NOV 19,1974	
3.950	246.988	19	25	NOV 19,1974	
3.967	255.473	19	26	NOV 19,1974	
3.983	260.758	19	27	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RUN
12-16-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
4.000	264.005	19	28	NOV 19,1974	
4.017	265.783	19	29	NOV 19,1974	
4.033	266.850	19	30	NOV 19,1974	
4.050	267.324	19	31	NOV 19,1974	
4.067	267.063	19	32	NOV 19,1974	
4.083	268.082	19	33	NOV 19,1974	
4.100	268.319	19	34	NOV 19,1974	
4.117	268.722	19	35	NOV 19,1974	
4.133	269.101	19	36	NOV 19,1974	
4.150	269.220	19	37	NOV 19,1974	
4.167	269.030	19	38	NOV 19,1974	
4.183	268.722	19	39	NOV 19,1974	
4.200	269.338	19	40	NOV 19,1974	
4.217	269.409	19	41	NOV 19,1974	
4.233	269.362	19	42	NOV 19,1974	
4.250	269.149	19	43	NOV 19,1974	
4.267	269.646	19	44	NOV 19,1974	
4.283	269.504	19	45	NOV 19,1974	
4.300	269.528	19	46	NOV 19,1974	
4.317	269.670	19	47	NOV 19,1974	
4.333	269.623	19	48	NOV 19,1974	
4.350	269.883	19	49	NOV 19,1974	
4.367	269.599	19	50	NOV 19,1974	
4.383	270.073	19	51	NOV 19,1974	
4.400	269.907	19	52	NOV 19,1974	
4.417	270.002	19	53	NOV 19,1974	
4.433	269.954	19	54	NOV 19,1974	
4.450	270.168	19	55	NOV 19,1974	
4.467	270.263	19	56	NOV 19,1974	
4.483	270.381	19	57	NOV 19,1974	
4.500	270.286	19	58	NOV 19,1974	
4.517	270.428	19	59	NOV 19,1974	
4.533	270.500	20	00	NOV 19,1974	
4.550	270.452	20	01	NOV 19,1974	
4.567	270.357	20	02	NOV 19,1974	
4.583	270.760	20	03	NOV 19,1974	
4.600	270.689	20	04	NOV 19,1974	
4.617	270.618	20	05	NOV 19,1974	
4.633	270.713	20	06	NOV 19,1974	
4.650	270.594	20	07	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RUN
12-16-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
4.667	270.713	20	08	NOV 19,1974	
4.683	270.737	20	09	NOV 19,1974	
4.700	270.713	20	10	NOV 19,1974	
4.717	270.855	20	11	NOV 19,1974	
4.733	270.713	20	12	NOV 19,1974	
4.750	270.879	20	13	NOV 19,1974	
4.767	270.902	20	14	NOV 19,1974	
4.783	270.926	20	15	NOV 19,1974	
4.800	270.997	20	16	NOV 19,1974	
4.817	271.092	20	17	NOV 19,1974	
4.833	270.950	20	18	NOV 19,1974	
4.850	270.997	20	19	NOV 19,1974	
4.867	270.902	20	20	NOV 19,1974	
4.883	270.950	20	21	NOV 19,1974	
4.900	270.902	20	22	NOV 19,1974	
4.917	271.116	20	23	NOV 19,1974	
4.933	270.997	20	24	NOV 19,1974	
4.950	271.139	20	25	NOV 19,1974	
4.967	271.187	20	26	NOV 19,1974	
4.983	271.187	20	27	NOV 19,1974	
5.000	271.234	20	28	NOV 19,1974	
5.017	271.353	20	29	NOV 19,1974	
5.033	271.139	20	30	NOV 19,1974	
5.050	271.163	20	31	NOV 19,1974	
5.067	271.139	20	32	NOV 19,1974	
5.083	271.187	20	33	NOV 19,1974	
5.100	271.258	20	34	NOV 19,1974	
5.117	271.234	20	35	NOV 19,1974	
5.133	271.211	20	36	NOV 19,1974	
5.150	271.400	20	37	NOV 19,1974	
5.167	271.329	20	38	NOV 19,1974	
5.183	274.552	20	39	NOV 19,1974	START 5 G/M
5.200	276.330	20	40	NOV 19,1974	DOWN DP
5.217	277.563	20	41	NOV 19,1974	
5.233	278.771	20	42	NOV 19,1974	
5.250	279.316	20	43	NOV 19,1974	
5.267	279.719	20	44	NOV 19,1974	
5.283	280.170	20	45	NOV 19,1974	
5.300	280.478	20	46	NOV 19,1974	
5.317	280.549	20	47	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RUN
12-16-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
5.333	280.715	20	48	NOV 19,1974	
5.350	280.762	20	49	NOV 19,1974	
5.367	280.999	20	50	NOV 19,1974	
5.383	281.047	20	51	NOV 19,1974	
5.400	281.118	20	52	NOV 19,1974	END 5 G/M DOWN
5.417	280.027	20	53	NOV 19,1974	DP
5.433	277.017	20	54	NOV 19,1974	
5.450	275.263	20	55	NOV 19,1974	
5.467	273.984	20	56	NOV 19,1974	
5.483	273.249	20	57	NOV 19,1974	
5.500	272.941	20	58	NOV 19,1974	
5.517	272.609	20	59	NOV 19,1974	
5.533	272.656	21	00	NOV 19,1974	
5.550	272.348	21	01	NOV 19,1974	
5.567	272.348	21	02	NOV 19,1974	
5.583	274.671	21	03	NOV 19,1974	START 10 G/M
5.600	279.174	21	04	NOV 19,1974	DOWN DP
5.617	283.440	21	05	NOV 19,1974	
5.633	286.048	21	06	NOV 19,1974	
5.650	287.920	21	07	NOV 19,1974	
5.667	289.034	21	08	NOV 19,1974	
5.683	289.935	21	09	NOV 19,1974	
5.700	290.717	21	10	NOV 19,1974	
5.717	291.096	21	11	NOV 19,1974	
5.733	291.783	21	12	NOV 19,1974	
5.750	292.068	21	13	NOV 19,1974	
5.767	292.660	21	14	NOV 19,1974	
5.783	293.134	21	15	NOV 19,1974	
5.800	293.845	21	16	NOV 19,1974	
5.817	294.367	21	17	NOV 19,1974	END 10 G/M
5.833	293.419	21	18	NOV 19,1974	DOWN DP
5.850	287.138	21	19	NOV 19,1974	
5.867	282.208	21	20	NOV 19,1974	
5.883	279.103	21	21	NOV 19,1974	
5.900	276.804	21	22	NOV 19,1974	
5.917	275.263	21	23	NOV 19,1974	
5.933	274.458	21	24	NOV 19,1974	
5.950	274.197	21	25	NOV 19,1974	
5.967	273.604	21	26	NOV 19,1974	
5.983	273.462	21	27	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RUN
12-16-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR MIN	DATE	COMMENTS
6.000	275.643	21 28	NOV 19,1974	START 20 G/M
6.017	289.840	21 29	NOV 19,1974	DOWN DP
6.033	298.420	21 30	NOV 19,1974	
6.050	306.265	21 31	NOV 19,1974	
6.067	313.114	21 32	NOV 19,1974	
6.083	317.855	21 33	NOV 19,1974	
6.100	322.571	21 34	NOV 19,1974	
6.117	325.771	21 35	NOV 19,1974	
6.133	329.871	21 36	NOV 19,1974	
6.150	333.639	21 37	NOV 19,1974	
6.167	336.365	21 38	NOV 19,1974	
6.183	339.944	21 39	NOV 19,1974	
6.200	344.708	21 40	NOV 19,1974	
6.217	350.064	21 41	NOV 19,1974	
6.233	354.899	21 42	NOV 19,1974	END 20 G/M
6.250	349.567	21 43	NOV 19,1974	DOWN DP
6.267	335.867	21 44	NOV 19,1974	
6.283	323.709	21 45	NOV 19,1974	
6.300	313.517	21 46	NOV 19,1974	
6.317	305.340	21 47	NOV 19,1974	
6.333	297.377	21 48	NOV 19,1974	
6.350	291.973	21 49	NOV 19,1974	
6.367	287.493	21 50	NOV 19,1974	
6.383	283.962	21 51	NOV 19,1974	
6.400	281.189	21 52	NOV 19,1974	
6.417	307.853	21 53	NOV 19,1974	FILL DP
6.433	315.508	21 54	NOV 19,1974	
6.450	366.086	21 55	NOV 19,1974	
6.467	367.935	21 56	NOV 19,1974	
6.483	384.431	21 57	NOV 19,1974	
6.500	421.191	21 58	NOV 19,1974	
6.517	427.548	21 59	NOV 19,1974	
6.533	439.646	22 00	NOV 19,1974	
6.550	444.065	22 01	NOV 19,1974	
6.567	446.428	22 02	NOV 19,1974	
6.583	448.910	22 03	NOV 19,1974	
6.600	451.060	22 04	NOV 19,1974	
6.617	452.927	22 05	NOV 19,1974	
6.633	454.226	22 06	NOV 19,1974	
6.650	455.030	22 07	NOV 19,1974	DP FILLED

JOB NUMBER
SPG-11210-D

DATE OF JO
11-19-7

GAUGE/RUN NUMBER
196 RUN NO. 4 DST NO. 7

DATE OF RU
12-16-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
6.667	435.606	22	08	NOV 19,1974	
6.683	417.068	22	09	NOV 19,1974	
6.700	399.884	22	10	NOV 19,1974	
6.717	383.957	22	11	NOV 19,1974	
6.733	369.499	22	12	NOV 19,1974	
6.750	356.796	22	13	NOV 19,1974	
6.767	344.542	22	14	NOV 19,1974	
6.783	334.422	22	15	NOV 19,1974	
6.800	324.372	22	16	NOV 19,1974	INJECT 20 G/M
6.817	318.234	22	17	NOV 19,1974	DOWN ANNULUS
6.833	311.313	22	18	NOV 19,1974	
6.850	304.795	22	19	NOV 19,1974	
6.867	298.372	22	20	NOV 19,1974	
6.883	293.442	22	21	NOV 19,1974	
6.900	289.792	22	22	NOV 19,1974	
6.917	286.308	22	23	NOV 19,1974	
6.933	283.959	22	24	NOV 19,1974	
6.950	281.687	22	25	NOV 19,1974	
6.967	280.075	22	26	NOV 19,1974	
6.983	279.245	22	27	NOV 19,1974	
7.000	278.013	22	28	NOV 19,1974	
7.017	277.752	22	29	NOV 19,1974	
7.033	277.207	22	30	NOV 19,1974	END 20 G/M
7.050	276.875	22	31	NOV 19,1974	DOWN ANNULUS
7.067	276.543	22	32	NOV 19,1974	
7.083	276.235	22	33	NOV 19,1974	
7.100	276.212	22	34	NOV 19,1974	
7.117	276.046	22	35	NOV 19,1974	
7.133	275.809	22	36	NOV 19,1974	
7.150	275.714	22	37	NOV 19,1974	
7.167	275.690	22	38	NOV 19,1974	
7.200	275.548	22	40	NOV 19,1974	
7.217	275.477	22	41	NOV 19,1974	END TEST

433 POINTS REPORTED THIS RUN

JOB NUMBER
SPG-11210-D

DATE OF JO
11-19-7

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

PREPARED FOR

ATLANTIC RICHFIELD COMPANY

WELL NUMBER	FEDERAL SG-17
FIELD/LEASE	TRACT C-B SORGHUM GULCH
COUNTY/PARISH	RIO BLANCO
STATE	COLORADO
TYPE OF TEST	DRILL STEM
REFERENCE ELEV	GROUND LEVEL

ADDITIONAL INFORMATION

USED GAUGE NO. 204 WITH 1000 LB. ELEMENT

GAUGE DEPTH IS 977.66 FEET OUTSIDE

DP - IN ANNULUS ABOVE PACKER

INITIAL HYDROSTATIC IS 229.94

FINAL HYDROSTATIC IS 234.01

TEST INTERVAL IS SURFACE TO

1017 FEET (PACKER DEPTH)

33 POINTS REPORTED THIS JOB

JOB NUMBER
SPG-11210-D

DATE OF JOB
11-19-74

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RUN
12-16-74

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
0.000	232.411	14	46	NOV 19,1974	CLOSE TOOL
.017	232.617	14	47	NOV 19,1974	START INITIAL
.033	232.731	14	48	NOV 19,1974	SHUT-IN
.050	232.799	14	49	NOV 19,1974	
.067	232.868	14	50	NOV 19,1974	
.083	232.959	14	51	NOV 19,1974	
.100	233.028	14	52	NOV 19,1974	
.117	233.051	14	53	NOV 19,1974	
.133	233.074	14	54	NOV 19,1974	
.150	233.142	14	55	NOV 19,1974	
.167	233.142	14	56	NOV 19,1974	
.183	233.165	14	57	NOV 19,1974	
.200	233.188	14	58	NOV 19,1974	
.217	233.211	14	59	NOV 19,1974	
.233	233.234	15	00	NOV 19,1974	
.250	233.234	15	01	NOV 19,1974	
.267	233.234	15	02	NOV 19,1974	
.283	233.257	15	03	NOV 19,1974	
.300	233.257	15	04	NOV 19,1974	
.317	233.257	15	05	NOV 19,1974	
.333	233.257	15	06	NOV 19,1974	
.350	233.279	15	07	NOV 19,1974	
.367	233.279	15	08	NOV 19,1974	
.383	233.302	15	09	NOV 19,1974	
.400	233.302	15	10	NOV 19,1974	
.417	233.302	15	11	NOV 19,1974	
.433	233.325	15	12	NOV 19,1974	
.450	233.325	15	13	NOV 19,1974	
.467	233.325	15	14	NOV 19,1974	
.483	233.348	15	15	NOV 19,1974	
.500	233.348	15	16	NOV 19,1974	
.517	233.348	15	17	NOV 19,1974	
.533	233.348	15	18	NOV 19,1974	END SHUT-IN

33 POINTS REPORTED THIS RUN

JOB NUMBER
SPG-11210-D

DATE OF JOB
NOVEMBER 1., 1974

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

PREPARED FOR

ATLANTIC RICHFIELD COMPANY

WELL NUMBER	FEDERAL SG-17
FIELD/LEASE	TRACT C-B SORGHUM GULCH
COUNTY/PARISH	RIO BLANCO
STATE	COLORADO
TYPE OF TEST	DRILL STEM
REFERENCE ELEV	GROUND LEVEL

ADDITIONAL INFORMATION

USED GAUGE NO. 204 WITH 1000 LB. ELEMENT

GAUGE DEPTH IS 977.66 FEET OUTSIDE

DP - IN ANNULUS ABOVE PACKER

GROUND LEVEL REFERENCE IS 7036 FEET

INITIAL HYDROSTATIC IS 229.94

FINAL HYDROSTATIC IS 234.01

TEST INTERVAL IS SURFACE TO

1017 FEET (PACKER DEPTH)

II B-472

434 POINTS REPORTED THIS JOB

JOB NUMBER
SPG-11210-D

DATE OF JO
NOVEMBER 1., 197

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RU
DECEMBER 16, 197

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
0.000	233.531	15	28	NOV 19,1974	START FLOW
.017	233.645	15	29	NOV 19,1974	INSIDE DP
.033	233.645	15	30	NOV 19,1974	
.050	233.600	15	31	NOV 19,1974	
.067	233.600	15	32	NOV 19,1974	
.083	233.600	15	33	NOV 19,1974	
.100	233.577	15	34	NOV 19,1974	
.117	233.577	15	35	NOV 19,1974	
.133	233.600	15	36	NOV 19,1974	
.150	233.600	15	37	NOV 19,1974	
.167	233.600	15	38	NOV 19,1974	
.183	233.622	15	39	NOV 19,1974	
.200	233.622	15	40	NOV 19,1974	
.217	233.622	15	41	NOV 19,1974	
.233	233.645	15	42	NOV 19,1974	
.250	233.668	15	43	NOV 19,1974	
.267	233.668	15	44	NOV 19,1974	
.283	233.668	15	45	NOV 19,1974	
.300	233.668	15	46	NOV 19,1974	
.317	233.691	15	47	NOV 19,1974	
.333	233.737	15	48	NOV 19,1974	
.350	233.714	15	49	NOV 19,1974	
.367	233.691	15	50	NOV 19,1974	
.383	233.714	15	51	NOV 19,1974	
.400	233.714	15	52	NOV 19,1974	
.417	233.737	15	53	NOV 19,1974	
.433	233.714	15	54	NOV 19,1974	
.450	233.737	15	55	NOV 19,1974	
.467	233.760	15	56	NOV 19,1974	
.483	233.760	15	57	NOV 19,1974	
.500	233.760	15	58	NOV 19,1974	
.517	233.760	15	59	NOV 19,1974	
.533	233.760	16	00	NOV 19,1974	
.550	233.760	16	01	NOV 19,1974	
.567	233.805	16	02	NOV 19,1974	
.583	233.805	16	03	NOV 19,1974	
.600	233.828	16	04	NOV 19,1974	
.617	233.828	16	05	NOV 19,1974	
.633	233.828	16	06	NOV 19,1974	
.650	233.828	16	07	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JO
NOVEMBER 1., 197

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RU
DECEMBER 16, 197

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
.667	233.828	16	08	NOV 19,1974	
.683	233.828	16	09	NOV 19,1974	
.700	233.874	16	10	NOV 19,1974	
.717	233.874	16	11	NOV 19,1974	
.733	233.874	16	12	NOV 19,1974	
.750	233.874	16	13	NOV 19,1974	
.767	233.897	16	14	NOV 19,1974	
.783	233.920	16	15	NOV 19,1974	
.800	233.920	16	16	NOV 19,1974	
.817	233.920	16	17	NOV 19,1974	
.833	233.920	16	18	NOV 19,1974	
.850	233.942	16	19	NOV 19,1974	
.867	233.942	16	20	NOV 19,1974	
.883	233.942	16	21	NOV 19,1974	
.900	233.942	16	22	NOV 19,1974	
.917	233.965	16	23	NOV 19,1974	
.933	233.965	16	24	NOV 19,1974	
.950	233.965	16	25	NOV 19,1974	
.967	233.965	16	26	NOV 19,1974	
.983	233.988	16	27	NOV 19,1974	
1.000	233.988	16	28	NOV 19,1974	
1.017	233.988	16	29	NOV 19,1974	
1.033	234.011	16	30	NOV 19,1974	
1.050	234.011	16	31	NOV 19,1974	
1.067	234.011	16	32	NOV 19,1974	
1.083	234.034	16	33	NOV 19,1974	
1.100	234.034	16	34	NOV 19,1974	
1.117	234.057	16	35	NOV 19,1974	
1.133	234.057	16	36	NOV 19,1974	
1.150	234.057	16	37	NOV 19,1974	
1.167	234.057	16	38	NOV 19,1974	
1.183	234.102	16	39	NOV 19,1974	
1.200	234.102	16	40	NOV 19,1974	
1.217	234.102	16	41	NOV 19,1974	
1.233	234.102	16	42	NOV 19,1974	
1.250	234.102	16	43	NOV 19,1974	
1.267	234.102	16	44	NOV 19,1974	
1.283	234.102	16	45	NOV 19,1974	
1.300	234.125	16	46	NOV 19,1974	
1.317	234.148	16	47	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JO
NOVEMBER 1, 197

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RU
DECEMBER 16, 197

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
1.333	234.148	16	48	NOV 19,1974	END RECOVERY
1.350	234.148	16	49	NOV 19,1974	INSIDE DP
1.367	234.148	16	50	NOV 19,1974	THIS GAUGE IN
1.383	234.171	16	51	NOV 19,1974	ANNULUS
1.400	234.171	16	52	NOV 19,1974	
1.417	234.171	16	53	NOV 19,1974	
1.433	234.171	16	54	NOV 19,1974	
1.450	234.171	16	55	NOV 19,1974	
1.467	234.171	16	56	NOV 19,1974	
1.483	234.171	16	57	NOV 19,1974	
1.500	234.194	16	58	NOV 19,1974	
1.517	234.217	16	59	NOV 19,1974	
1.533	234.217	17	00	NOV 19,1974	
1.550	234.217	17	01	NOV 19,1974	
1.567	234.217	17	02	NOV 19,1974	
1.583	234.217	17	03	NOV 19,1974	
1.600	234.240	17	04	NOV 19,1974	
1.617	234.240	17	05	NOV 19,1974	
1.633	234.240	17	06	NOV 19,1974	
1.650	234.262	17	07	NOV 19,1974	
1.667	234.262	17	08	NOV 19,1974	
1.683	234.262	17	09	NOV 19,1974	
1.700	234.262	17	10	NOV 19,1974	
1.717	234.262	17	11	NOV 19,1974	
1.733	234.262	17	12	NOV 19,1974	
1.750	234.285	17	13	NOV 19,1974	
1.767	234.308	17	14	NOV 19,1974	
1.783	234.331	17	15	NOV 19,1974	
1.800	234.331	17	16	NOV 19,1974	
1.817	234.331	17	17	NOV 19,1974	
1.833	234.331	17	18	NOV 19,1974	
1.850	234.354	17	19	NOV 19,1974	
1.867	234.354	17	20	NOV 19,1974	
1.883	234.354	17	21	NOV 19,1974	
1.900	234.354	17	22	NOV 19,1974	
1.917	234.354	17	23	NOV 19,1974	
1.933	234.354	17	24	NOV 19,1974	
1.950	234.354	17	25	NOV 19,1974	
1.967	234.354	17	26	NOV 19,1974	
1.983	234.354	17	27	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JO
NOVEMBER 1., 197

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RU
DECEMBER 16, 197

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
2.000	234.354	17	28	NOV 19,1974	
2.017	234.354	17	29	NOV 19,1974	
2.033	234.377	17	30	NOV 19,1974	
2.050	234.400	17	31	NOV 19,1974	
2.067	234.400	17	32	NOV 19,1974	
2.083	234.400	17	33	NOV 19,1974	
2.100	234.422	17	34	NOV 19,1974	
2.117	234.422	17	35	NOV 19,1974	
2.133	234.445	17	36	NOV 19,1974	
2.150	234.445	17	37	NOV 19,1974	
2.167	234.445	17	38	NOV 19,1974	
2.183	234.468	17	39	NOV 19,1974	
2.200	234.468	17	40	NOV 19,1974	
2.217	234.468	17	41	NOV 19,1974	
2.233	234.468	17	42	NOV 19,1974	
2.250	234.468	17	43	NOV 19,1974	
2.267	234.514	17	44	NOV 19,1974	
2.283	234.514	17	45	NOV 19,1974	
2.300	234.514	17	46	NOV 19,1974	
2.317	234.514	17	47	NOV 19,1974	
2.333	234.514	17	48	NOV 19,1974	
2.350	234.514	17	49	NOV 19,1974	
2.367	234.514	17	50	NOV 19,1974	
2.383	234.537	17	51	NOV 19,1974	
2.400	234.537	17	52	NOV 19,1974	
2.417	234.537	17	53	NOV 19,1974	
2.433	234.560	17	54	NOV 19,1974	
2.450	234.560	17	55	NOV 19,1974	
2.467	234.560	17	56	NOV 19,1974	
2.483	234.560	17	57	NOV 19,1974	
2.500	234.560	17	58	NOV 19,1974	
2.517	234.560	17	59	NOV 19,1974	
2.533	234.560	18	00	NOV 19,1974	
2.550	234.560	18	01	NOV 19,1974	
2.567	234.582	18	02	NOV 19,1974	
2.583	234.605	18	03	NOV 19,1974	
2.600	234.605	18	04	NOV 19,1974	
2.617	234.605	18	05	NOV 19,1974	
2.633	234.605	18	06	NOV 19,1974	
2.650	234.628	18	07	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JO
NOVEMBER 1., 197

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RU
DECEMBER 16, 197

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
2.667	234.628	18	08	NOV 19,1974	
2.683	234.628	18	09	NOV 19,1974	
2.700	234.651	18	10	NOV 19,1974	
2.717	234.651	18	11	NOV 19,1974	
2.733	234.651	18	12	NOV 19,1974	
2.750	234.651	18	13	NOV 19,1974	
2.767	234.651	18	14	NOV 19,1974	
2.783	234.651	18	15	NOV 19,1974	
2.800	234.697	18	16	NOV 19,1974	
2.817	234.697	18	17	NOV 19,1974	
2.833	234.697	18	18	NOV 19,1974	
2.850	234.697	18	19	NOV 19,1974	
2.867	234.697	18	20	NOV 19,1974	
2.883	234.697	18	21	NOV 19,1974	
2.900	234.697	18	22	NOV 19,1974	
2.917	234.697	18	23	NOV 19,1974	
2.933	234.697	18	24	NOV 19,1974	START AIR JET
2.950	234.697	18	25	NOV 19,1974	DOWN DP
2.967	234.743	18	26	NOV 19,1974	
2.983	234.788	18	27	NOV 19,1974	
3.000	234.834	18	28	NOV 19,1974	
3.017	234.880	18	29	NOV 19,1974	
3.033	234.994	18	30	NOV 19,1974	
3.050	235.063	18	31	NOV 19,1974	
3.067	235.085	18	32	NOV 19,1974	
3.083	235.085	18	33	NOV 19,1974	
3.100	235.131	18	34	NOV 19,1974	
3.117	235.177	18	35	NOV 19,1974	
3.133	235.223	18	36	NOV 19,1974	
3.150	235.223	18	37	NOV 19,1974	
3.167	235.291	18	38	NOV 19,1974	
3.183	235.314	18	39	NOV 19,1974	
3.200	235.291	18	40	NOV 19,1974	
3.217	235.291	18	41	NOV 19,1974	
3.233	235.291	18	42	NOV 19,1974	
3.250	235.291	18	43	NOV 19,1974	
3.267	235.291	18	44	NOV 19,1974	
3.283	235.291	18	45	NOV 19,1974	
3.300	235.291	18	46	NOV 19,1974	
3.317	235.291	18	47	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JO
NOVEMBER 1., 197

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RU
DECEMBER 16, 197

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
3.333	235.291	18	48	NOV 19,1974	
3.350	235.291	18	49	NOV 19,1974	
3.367	235.291	18	50	NOV 19,1974	
3.383	235.291	18	51	NOV 19,1974	
3.400	235.291	18	52	NOV 19,1974	
3.417	235.291	18	53	NOV 19,1974	
3.433	235.291	18	54	NOV 19,1974	
3.450	235.314	18	55	NOV 19,1974	
3.467	235.291	18	56	NOV 19,1974	
3.483	235.268	18	57	NOV 19,1974	
3.500	235.314	18	58	NOV 19,1974	
3.517	235.314	18	59	NOV 19,1974	
3.533	235.291	19	00	NOV 19,1974	
3.550	235.291	19	01	NOV 19,1974	
3.567	235.314	19	02	NOV 19,1974	
3.583	235.314	19	03	NOV 19,1974	
3.600	235.314	19	04	NOV 19,1974	
3.617	235.291	19	05	NOV 19,1974	
3.633	235.314	19	06	NOV 19,1974	
3.650	235.337	19	07	NOV 19,1974	
3.667	235.337	19	08	NOV 19,1974	
3.683	235.314	19	09	NOV 19,1974	
3.700	235.337	19	10	NOV 19,1974	
3.717	235.383	19	11	NOV 19,1974	
3.733	235.360	19	12	NOV 19,1974	
3.750	235.337	19	13	NOV 19,1974	
3.767	235.337	19	14	NOV 19,1974	
3.783	235.360	19	15	NOV 19,1974	
3.800	235.360	19	16	NOV 19,1974	
3.817	235.405	19	17	NOV 19,1974	
3.833	235.405	19	18	NOV 19,1974	
3.850	235.451	19	19	NOV 19,1974	
3.867	235.451	19	20	NOV 19,1974	
3.883	235.451	19	21	NOV 19,1974	
3.900	235.451	19	22	NOV 19,1974	END AIR JET
3.917	235.474	19	23	NOV 19,1974	DOWN ANNULUS
3.933	235.474	19	24	NOV 19,1974	
3.950	235.474	19	25	NOV 19,1974	
3.967	235.474	19	26	NOV 19,1974	
3.983	235.474	19	27	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF J
NOVEMBER 1., 19

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF R
DECEMBER 16, 19

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
4.000	235.451	19	28	NOV 19,1974	
4.017	235.428	19	29	NOV 19,1974	
4.033	235.474	19	30	NOV 19,1974	
4.050	235.405	19	31	NOV 19,1974	
4.067	235.360	19	32	NOV 19,1974	
4.083	235.360	19	33	NOV 19,1974	
4.100	235.337	19	34	NOV 19,1974	
4.117	235.337	19	35	NOV 19,1974	
4.133	235.337	19	36	NOV 19,1974	
4.150	235.314	19	37	NOV 19,1974	
4.167	235.314	19	38	NOV 19,1974	
4.183	235.360	19	39	NOV 19,1974	
4.200	235.291	19	40	NOV 19,1974	
4.217	235.245	19	41	NOV 19,1974	
4.233	235.268	19	42	NOV 19,1974	
4.250	235.268	19	43	NOV 19,1974	
4.267	235.268	19	44	NOV 19,1974	
4.283	235.268	19	45	NOV 19,1974	
4.300	235.268	19	46	NOV 19,1974	
4.317	235.245	19	47	NOV 19,1974	
4.333	235.291	19	48	NOV 19,1974	
4.350	235.245	19	49	NOV 19,1974	
4.367	235.245	19	50	NOV 19,1974	
4.383	235.245	19	51	NOV 19,1974	
4.400	235.245	19	52	NOV 19,1974	
4.417	235.268	19	53	NOV 19,1974	
4.433	235.268	19	54	NOV 19,1974	
4.450	235.291	19	55	NOV 19,1974	
4.467	235.268	19	56	NOV 19,1974	
4.483	235.245	19	57	NOV 19,1974	
4.500	235.291	19	58	NOV 19,1974	
4.517	235.291	19	59	NOV 19,1974	
4.533	235.291	20	00	NOV 19,1974	
4.550	235.291	20	01	NOV 19,1974	
4.567	235.291	20	02	NOV 19,1974	
4.583	235.291	20	03	NOV 19,1974	
4.600	235.291	20	04	NOV 19,1974	
4.617	235.314	20	05	NOV 19,1974	
4.633	235.314	20	06	NOV 19,1974	
4.650	235.314	20	07	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JO
NOVEMBER 1, 197

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RU
DECEMBER 16, 197

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
4.667	235.314	20	08	NOV 19,1974	
4.683	235.314	20	09	NOV 19,1974	
4.700	235.314	20	10	NOV 19,1974	
4.717	235.314	20	11	NOV 19,1974	
4.733	235.314	20	12	NOV 19,1974	
4.750	235.314	20	13	NOV 19,1974	
4.767	235.337	20	14	NOV 19,1974	
4.783	235.314	20	15	NOV 19,1974	
4.800	235.314	20	16	NOV 19,1974	
4.817	235.360	20	17	NOV 19,1974	
4.833	235.360	20	18	NOV 19,1974	
4.850	235.383	20	19	NOV 19,1974	
4.867	235.337	20	20	NOV 19,1974	
4.883	235.337	20	21	NOV 19,1974	
4.900	235.383	20	22	NOV 19,1974	
4.917	235.337	20	23	NOV 19,1974	
4.933	235.360	20	24	NOV 19,1974	
4.950	235.360	20	25	NOV 19,1974	
4.967	235.360	20	26	NOV 19,1974	
4.983	235.383	20	27	NOV 19,1974	
5.000	235.383	20	28	NOV 19,1974	
5.017	235.405	20	29	NOV 19,1974	
5.033	235.405	20	30	NOV 19,1974	
5.050	235.383	20	31	NOV 19,1974	
5.067	235.383	20	32	NOV 19,1974	
5.083	235.383	20	33	NOV 19,1974	
5.100	235.428	20	34	NOV 19,1974	
5.117	235.428	20	35	NOV 19,1974	
5.133	235.428	20	36	NOV 19,1974	
5.150	235.428	20	37	NOV 19,1974	
5.167	235.451	20	38	NOV 19,1974	
5.183	235.451	20	39	NOV 19,1974	START 5 GPM
5.200	235.451	20	40	NOV 19,1974	DOWN DP
5.217	235.474	20	41	NOV 19,1974	
5.233	235.474	20	42	NOV 19,1974	
5.250	235.497	20	43	NOV 19,1974	
5.267	235.451	20	44	NOV 19,1974	
5.283	235.497	20	45	NOV 19,1974	
5.300	235.520	20	46	NOV 19,1974	
5.317	235.543	20	47	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JO
NOVEMBER 1., 197

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RU
DECEMBER 16, 197

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	TIME MIN	DATE	COMMENTS
5.333	235.543	20	48	NOV 19,1974	
5.350	235.543	20	49	NOV 19,1974	
5.367	235.565	20	50	NOV 19,1974	
5.383	235.543	20	51	NOV 19,1974	
5.400	235.543	20	52	NOV 19,1974	END 5 GPM DOWN
5.417	235.565	20	53	NOV 19,1974	DP
5.433	235.611	20	54	NOV 19,1974	
5.450	235.588	20	55	NOV 19,1974	
5.467	235.565	20	56	NOV 19,1974	
5.483	235.588	20	57	NOV 19,1974	
5.500	235.588	20	58	NOV 19,1974	
5.517	235.588	20	59	NOV 19,1974	
5.533	235.588	21	00	NOV 19,1974	
5.550	235.588	21	01	NOV 19,1974	
5.567	235.588	21	02	NOV 19,1974	
5.583	235.588	21	03	NOV 19,1974	START 10 GPM
5.600	235.588	21	04	NOV 19,1974	DOWN DP
5.617	235.634	21	05	NOV 19,1974	
5.633	235.634	21	06	NOV 19,1974	
5.650	235.634	21	07	NOV 19,1974	
5.667	235.634	21	08	NOV 19,1974	
5.683	235.725	21	09	NOV 19,1974	
5.700	235.725	21	10	NOV 19,1974	
5.717	235.725	21	11	NOV 19,1974	
5.733	235.725	21	12	NOV 19,1974	
5.750	235.748	21	13	NOV 19,1974	
5.767	235.771	21	14	NOV 19,1974	
5.783	235.771	21	15	NOV 19,1974	
5.800	235.771	21	16	NOV 19,1974	
5.817	235.817	21	17	NOV 19,1974	END 10 GPM
5.833	235.817	21	18	NOV 19,1974	DOWN DP
5.850	235.817	21	19	NOV 19,1974	
5.867	235.817	21	20	NOV 19,1974	
5.883	235.817	21	21	NOV 19,1974	
5.900	235.817	21	22	NOV 19,1974	
5.917	235.771	21	23	NOV 19,1974	
5.933	235.771	21	24	NOV 19,1974	
5.950	235.771	21	25	NOV 19,1974	
5.967	235.817	21	26	NOV 19,1974	
5.983	235.817	21	27	NOV 19,1974	

JOB NUMBER
SPG-11210-D

DATE OF JOB
NOVEMBER 1., 1974

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RUN
DECEMBER 16, 1974

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
6.000	235.840	21	28	NOV 19,1974	START 20 GPM
6.017	235.840	21	29	NOV 19,1974	DOWN DP
6.033	235.863	21	30	NOV 19,1974	
6.050	235.885	21	31	NOV 19,1974	
6.067	235.885	21	32	NOV 19,1974	
6.083	235.931	21	33	NOV 19,1974	
6.100	235.931	21	34	NOV 19,1974	
6.117	235.954	21	35	NOV 19,1974	
6.133	235.977	21	36	NOV 19,1974	
6.150	235.977	21	37	NOV 19,1974	
6.167	236.023	21	38	NOV 19,1974	
6.183	236.046	21	39	NOV 19,1974	
6.200	236.046	21	40	NOV 19,1974	
6.217	236.068	21	41	NOV 19,1974	
6.233	236.068	21	42	NOV 19,1974	END 20 GPM
6.250	236.068	21	43	NOV 19,1974	DOWN DP
6.267	236.068	21	44	NOV 19,1974	
6.283	236.068	21	45	NOV 19,1974	
6.300	236.114	21	46	NOV 19,1974	
6.317	236.046	21	47	NOV 19,1974	
6.333	236.046	21	48	NOV 19,1974	
6.350	236.046	21	49	NOV 19,1974	
6.367	236.091	21	50	NOV 19,1974	
6.383	236.046	21	51	NOV 19,1974	
6.400	236.023	21	52	NOV 19,1974	
6.417	236.091	21	53	NOV 19,1974	FILL PIPE
6.433	236.114	21	54	NOV 19,1974	
6.450	236.114	21	55	NOV 19,1974	
6.467	236.091	21	56	NOV 19,1974	
6.483	236.183	21	57	NOV 19,1974	
6.500	236.228	21	58	NOV 19,1974	
6.517	236.228	21	59	NOV 19,1974	
6.533	237.120	22	00	NOV 19,1974	
6.550	237.897	22	01	NOV 19,1974	
6.567	238.331	22	02	NOV 19,1974	
6.583	238.606	22	03	NOV 19,1974	
6.600	239.040	22	04	NOV 19,1974	
6.617	239.452	22	05	NOV 19,1974	
6.633	239.680	22	06	NOV 19,1974	
6.650	239.680	22	07	NOV 19,1974	DP FILLED

JOB NUMBER
SPG-11210-D

DATE OF JO
NOVEMBER 1., 197

GAUGE/RUN NUMBER
204 RUN NO. 4 DST NO. 7

DATE OF RU
DECEMBER 16, 197

SPERRY-SUN
PRECISION SUBSURFACE PRESSURE GAUGE REPORT

DELTA TIME	PRESSURE (PSI)	TIME HR	MIN	DATE	COMMENTS
6.667	239.474	22	08	NOV 19,1974	
6.683	239.269	22	09	NOV 19,1974	
6.700	239.063	22	10	NOV 19,1974	
6.717	238.812	22	11	NOV 19,1974	
6.733	238.583	22	12	NOV 19,1974	
6.750	238.423	22	13	NOV 19,1974	
6.767	238.286	22	14	NOV 19,1974	
6.783	238.149	22	15	NOV 19,1974	
6.800	238.034	22	16	NOV 19,1974	START 20 GPM
6.817	239.863	22	17	NOV 19,1974	DOWN ANNULUS
6.833	242.012	22	18	NOV 19,1974	
6.850	243.864	22	19	NOV 19,1974	
6.867	245.578	22	20	NOV 19,1974	
6.883	247.315	22	21	NOV 19,1974	
6.900	249.007	22	22	NOV 19,1974	
6.917	250.630	22	23	NOV 19,1974	
6.933	251.933	22	24	NOV 19,1974	
6.950	253.282	22	25	NOV 19,1974	
6.967	254.402	22	26	NOV 19,1974	
6.983	255.499	22	27	NOV 19,1974	
7.000	256.414	22	28	NOV 19,1974	
7.017	257.397	22	29	NOV 19,1974	
7.033	258.197	22	30	NOV 19,1974	END 20 GPM
7.050	258.059	22	31	NOV 19,1974	DOWN ANNULUS
7.067	257.145	22	32	NOV 19,1974	
7.083	256.002	22	33	NOV 19,1974	
7.100	254.813	22	34	NOV 19,1974	
7.117	253.670	22	35	NOV 19,1974	
7.133	252.573	22	36	NOV 19,1974	
7.150	251.522	22	37	NOV 19,1974	
7.167	250.516	22	38	NOV 19,1974	
7.183	249.578	22	39	NOV 19,1974	
7.200	248.756	22	40	NOV 19,1974	
7.217	247.247	22	41	NOV 19,1974	END TEST

434 POINTS REPORTED THIS RUN